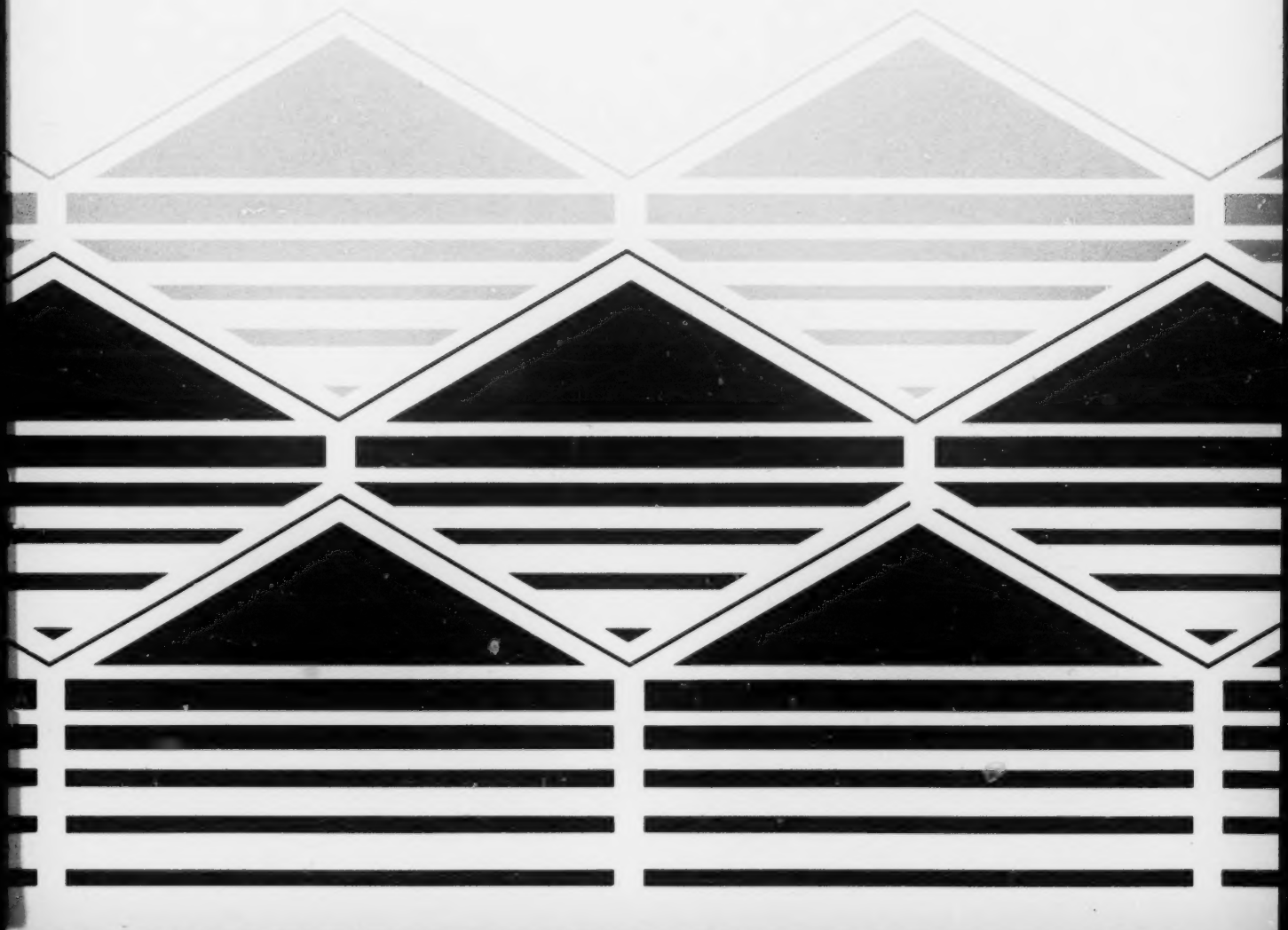
- A1775-4 U 1/88 -

AGA American Gas Association

Gas Househeating Survey: 1986



Gas Househeating Survey: 1986

39th Annual Survey
Gas Utility Industry
United States

Househeating Customers, 1986

Unit Additions --- Conversions and New Housing, 1986-1987

Househeating Market Shares by Utility Company, 1986

Competitive Fuel Prices, 1986

Published by:

American Gas Association
1515 Wilson Boulevard
Arlington, Virginia 22209

Prepared by:

Michael I. German
Vice President
Planning and Analysis Group

Richard L. Itteilag
Director
Gas Demand Analysis Division

James Pavle
Manager
Gas Demand Analysis Department

Russell Tucker
Energy Analyst
Gas Demand Analysis Department

COPYRIGHT, JULY 1987
by the American Gas Association
Reproduction in whole or part
prohibited without permission of
copyright owners.

Printed in the United States of America

Catalog No. F00087

Contents

	Page
Introduction	1
I. Executive Summary	2
II. United States Housing Market in 1986	4
New Housing - Starts	4
New Housing - Completions	4
Existing Housing	4
III. Residential Gas Customers in 1986	9
Total Residential Customers	9
Househeating Customers	9
Gas Househeating Unit Additions	9
Market Share	9
Gas Consumption per Unit	9
Conservation	16
Gas Cooling	16
Price/Heating Bills	19
Footnotes	19
Appendix 1 - 1986 Househeating Customer and Consumption Data	23
Appendix 2 - Competitive Fuel Prices	29
Appendix 3 - Househeating Unit Additions - 1986 Actual and 1987 Anticipated	37

List of Tables **Page**

1. 1986 Private Housing Completions by Heating Fuel 6

2. U.S. Residential Housing Inventory by Heating Fuel, 1981-1986 8

3. Residential and Househeating Customers of Gas Utilities and 1986 Househeating Unit Additions, by State, as of Dec. 31, 1986. 10

4. Househeating Conversions to Natural Gas in 1986 by Type of Fuel 12

5. 1987 Anticipated Additions of Gas Househeating Units 14

6. 1986 Average Annual Gas Consumption/Unit by Region 17

7. 1986 Average Conservation by Region 18

8. 1985 and 1986 Divisional Fuel Price Comparisons 20

9. 1985 and 1986 Divisional Gas Househeating Bill Comparisons 21

List of Figures

1. Percentage of Conversions to Gas by Fuel Type 3

2. Private Housing Starts - Actual and Projected 1981-1989 5

3. Comparison of Gas and Electric Single Family Home Completions 1980-1986 7

4. Househeating Unit Additions by Region 1984-1986 11

5. Househeating Conversions from Electricity to Gas 13

6. Gas Househeating Market Share by Region 15

Introduction

This report is the 39th Annual Gas Househeating Survey conducted by the American Gas Association. Data collected for 1986, as well as projected data for 1987, provide a unique and comprehensive portrait of the residential gas market by state and region, including customers, fuel prices, anticipated inventory additions from new homes and conversions, and existing requirements on new customer hook-ups. Company-specific data reported in this publication are unavailable in any other format.

A total of 149 gas utility companies, up noticeably from last year despite company mergers and consolidation, responded to this year's survey. The respondent companies represented the vast majority of the nation's residential gas customers, i.e., some 92 percent in 1986. This percentage of gas customers was also higher than last year. The information provided by these utilities was expanded to obtain the state and national totals shown in Tables 3 and 5. Individual company data are listed by region and state in Appendices 1, 2 and 3. Please note that some tabular data may not add to totals due to rounding.

The American Gas Association wishes to thank those companies who participated in the survey for making this publication possible.

I. Executive Summary

The major indices of residential gas market activity were generally positive in 1986 versus 1985. Unit additions and market shares were up, while prices were down and conversions held basically constant.

• Total conversions of existing units from alternative fuels to gas househeating were 148,500 in 1986, relatively flat compared with last year's level despite the considerably lower prices for heating oil (the main source for gas conversions). Based on A.G.A. survey data, 104,894 or 71 percent of all heating conversions, were from fuel oil to gas, 27,811 (19%) were from electricity, 11,822 (8%) from LPG, and 3,984 (3%) from "other fuels" (coal, wood, etc.). (See Figure 1)

- Natural gas conversions from electricity were up 34 percent to 27,811. This level has tripled since 1983.

• Natural gas improved its market share as the U.S. housing construction market continued its vigorous growth in 1986. Gas heated single family home completions achieved a milestone, actually showing a greater market share than electricity, 47 percent versus 44 percent. New housing completions increased by 3 percent to 1.76 million in 1986. Gas' overall market share of new housing completions increased to 43 percent in 1986 from 39 percent in 1985. The overall electric share dropped 5 points to 51 percent.

• New gas househeating unit additions numbered 685,360, a 13 percent increase over 1985. The addition of new gas househeating units from conversions of existing units and new housing combined totaled 833,870 in 1986, a 10 percent increase from last year.

Gas Househeating Unit Additions (thousands)

	1985	1986	1987 (Anticipated)
New Construction	607	685	780
Conversions	149	149	145
Total	**756**	**834**	**925**

• There were 46.95 million residential gas customers by year-end 1986, a net increase of 1.0 percent over 1985. Househeating customer saturation was constant at 88.8 percent. (Number of customers with gas heat divided by number of total customers).

• Average year-end prices declined in eight of the nine census regions. The price declines ranged from $0.11/MMBtu to $0.88/MMBtu, or 2 percent to 15.1 percent. The exception being the South Atlantic division which showed a slight 2 percent increase or $0.12/MMBtu. Average annual heating bills declined in all nine census divisions, due to both the price moderation and lower degree days compared to last year. The heating bills in these divisions declined an average of $27, with declines ranging from $6 to $83.

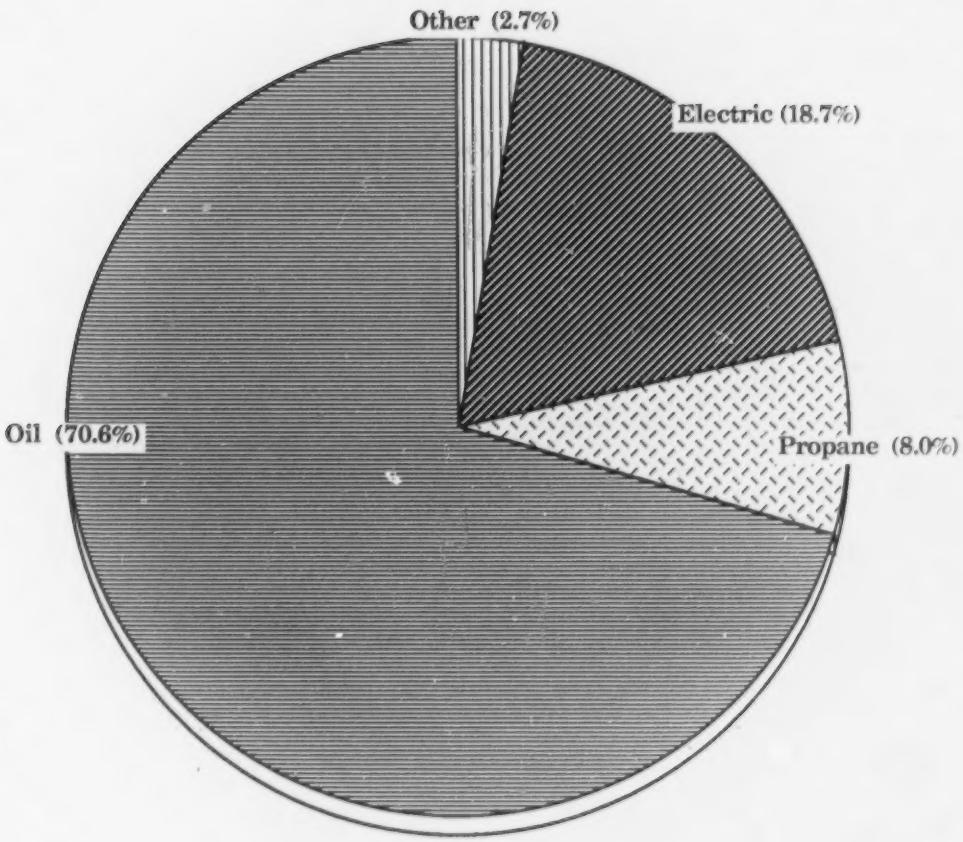
• Utilities expect to add approximately 145,307 conversions in 1987, which is up from last year's projection of 136,000. The projections for gas househeating additions from newly constructed units are about 14 percent higher than actual 1986 at 780,473 units. This means that new housing would account for 84 percent of total anticipated househeating additions, while total househeating additions would increase by 11 percent.

• In single family dwellings, gas consumption for househeating was 70.6 Mcf, while base load consumption was 30.8 Mcf. By comparison the average multi-family dwelling unit consumed 44.1 Mcf and 23.2 Mcf for househeating and base load use, respectively.

• Conservation, reported as the total percentage decline in consumption per customer corrected for weather variations, averaged 27.4 percent below the 1973 consumption level. Regionally, the conservation level ranged from a high of 33.3 percent in the Pacific division to a low of 19.9 percent in the New England division. This is a negligible change in conservation compared to last year.

Figure 1

Percentage of Conversions to Gas by Fuel Type



II. United States Housing Market In 1986

New Housing - Starts

The number of new private housing starts (seasonally adjusted) in 1986, 1.81 million units, was 4 percent higher than in 1985 (see Figure 2). This level is slightly higher than the 1979 level, but well above the 1.06 million units in 1982. The increase over 1985 is due to the 10 percent increase in single family starts, from 1.07 million to 1.18 million. The construction of multi-family units decreased slightly from 670,000 to 630,000.

Recent monthly housing-start data indicate a slight downward trend in the housing outlook for 1987. Privately owned housing starts authorized in the first four months of 1987 were at a seasonally adjusted annual rate of nearly 1.6 million starts.[1] This is 15 percent below the April 1987 rate. Wharton Econometric Forecasting Associates (WEFA) has predicted that 1987 private housing starts would average 1.71 million units. WEFA expects the housing market to then decline over the following two years, with starts nearing 1.65 million in 1988 and 1.60 million in 1989.

New Housing - Completions

The natural gas industry achieved a milestone in 1986 as new gas completions outnumbered new electric completions in the single family home market. New gas single family completions increased by 13 percent to 526,000 (See Table 1). Thus, the gas share increased to 47 percent of single family home completions, while the electric share dropped to 44 percent. Figure 3 shows how the gap has narrowed and then crossed over between gas and electric single family home completions since 1980.

Natural gas also showed improvement in the multi-family completions market. New gas multi-family completions increased by 12 percent in 1986 to 221,000. In contrast, electric multi-family completions decreased by 6 percent to 400,000.

Overall, natural gas improved its share of combined single and multi- family completions in 1986 to 43 percent, up from 39 percent in 1985. Combined single and multi-family electric completions declined to 51 percent from 56 percent in 1985.

Gas heated completions in 1986 outnumbered electric heated completions in three of four regions among single family homes. New electric heated completions among single family homes in the South outnumbered gas heated completions. However, the difference was smaller in 1986, 182,000, compared with a difference of 208,000 in 1985. In the multi-family sector gas completions outnumbered electric in the Northeast and West regions. Again, the South showed a wide margin (191,000) in electric heated completions compared to gas, although fewer than last year and the previous year. Gas completions increased by 26 percent in the Northeast and by 12 percent in the West.

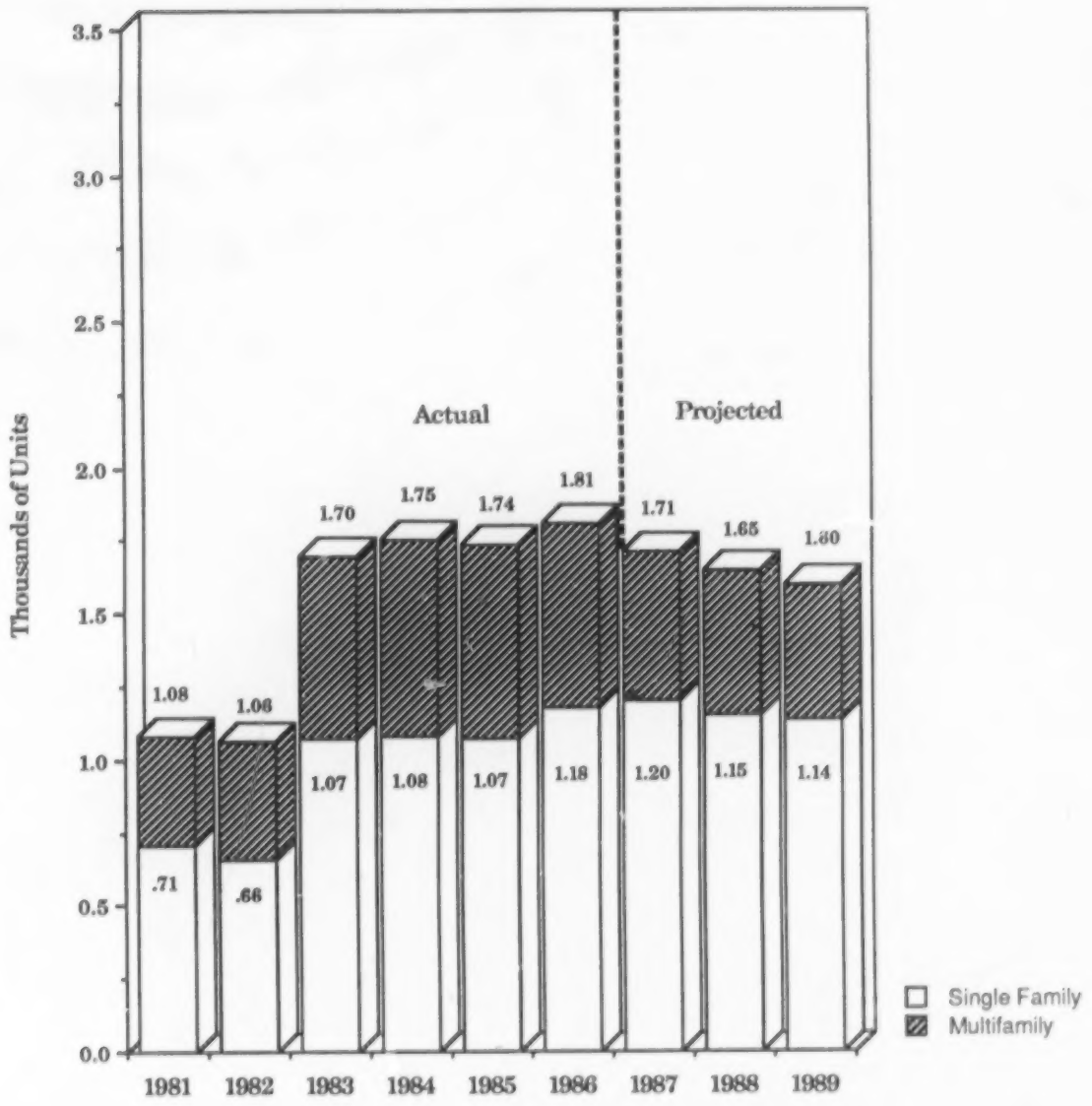
Existing Housing

The Bureau of the Census has switched to a biennial basis for the Annual Housing Survey and the data for 1985 are not yet available. A.G.A. estimates that there were 88.8 million occupied housing units in the United States in 1986. Of this total, 48.5 million, or 55 percent, were units which used natural gas for heating (see Table 2). A regional breakdown of the 48.5 million gas heated units found 43 percent in the the Northeast, 73 percent in the Midwest (sometimes called North Central), 43 percent in the South, and 64 percent in the West.

Figure 2

Private Housing Starts – Actual and Projected

1981-1989



Source: Actual -- U.S. Bureau of the Census, Construction Reports - Series C20, Housing Starts, issued June 1987.
Projected -- Wharton Econometric Forecasting Associates Long Term Model, Volume 5, No. 2, June 1987.

Table 1

1986 Private Housing Completions - By Heating Fuel
(Thousands of Units)

Single Family	Share	Units	Northeast	Midwest	South	West
Gas [a]	47%	526	80	132	152	162
Electricity	44%	496	59	30	334	74
Oil	5%	51	47	(I)	(I)	(I)
Other	4%	45	7	6	14	17
Subtotal	100%	1118	193	170	502	253
Multi-Family						
Gas [a]	35%	221	33	43	33	112
Electricity	63%	400	19	56	224	101
Oil	1%	8	7	(I)	1	(I)
Other	1%	7	2	1	1	3
Subtotal	100%	636	61	100	259	216
Total		1754	254	270	761	469

[a] Includes liquefied petroleum gas.
(I) Insufficient sample size to allow publication.

Source: U.S. Bureau of the Census, Characteristics of New Housing: 1986 Preliminary Data, Construction Reports C25-85-13, May 1987.

Figure 3

Comparison of Gas and Electric Single Family Home Completions 1980-1986

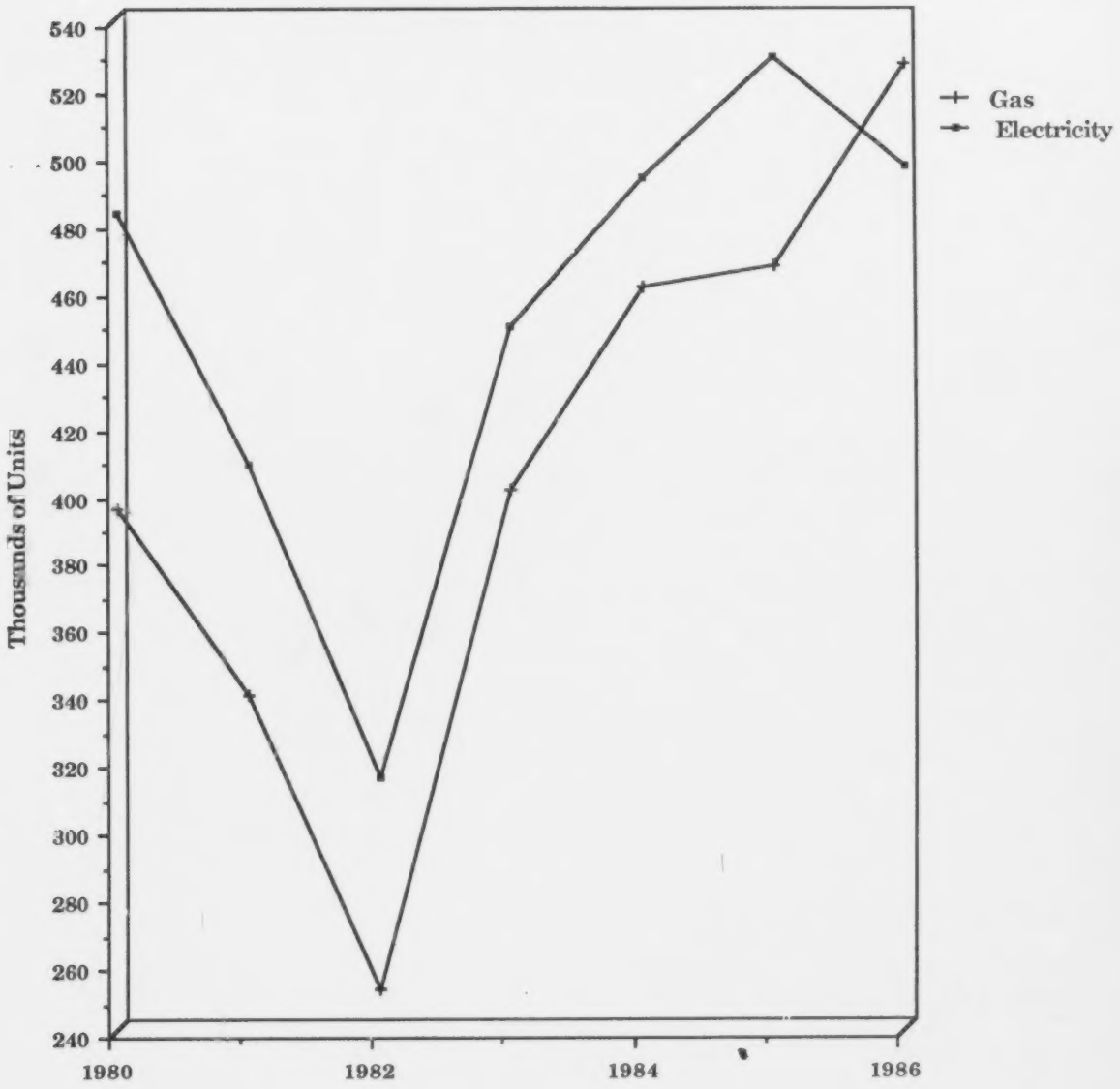


Table 2

U.S. RESIDENTIAL HOUSING INVENTORY BY HEATING FUEL
1981-1986
(Thousahds of Occupied Units[a])

	1981	1983	1986 Estimate[b]	Market Share
United States	83,175	84,638	88,840	
Gas	46,084	46,699	48,459	55%
Electric	15,486	15,683	18,382	21
Oil[c]	14,494	13,031	12,685	14
Other[d]	7,111	9,224	9,314	10
Northeast	17,852	18,221	18,689	
Gas	7,335	7,741	8,040	43%
Electric	1,281	1,319	1,566	8
Oil[c]	8,642	8,226	8,056	43
Other[d]	594	934	1,027	6
Midwest	21,564	21,618	22,059	
Gas	15,308	15,656	16,039	73%
Electric	2,210	2,172	2,365	11
Oil[c]	2,328	1,774	1,665	7
Other[d]	1,718	2,015	1,989	9
South	27,430	27,931	30,112	
Gas	12,725	12,346	12,851	43%
Electric	8,225	8,557	10,300	34
Oil[c]	2,905	2,559	2,472	8
Other[d]	3,575	4,470	4,489	15
West	16,329	16,868	17,981	
Gas	10,716	10,956	11,529	64%
Electric	3,770	3,635	4,151	23
Oil[c]	619	472	492	3
Other[d]	1,224	1,805	1,809	10

[a]Units include both single and multi-family.

[b]The Annual Housing Survey is now conducted biennually. The 1985 survey results will not be available unitl late 1987. A.G.A. estimates for 1985 were derived by adding number of dwellings completed by fuel type, as reported by U.S. Bureau of Census, Construction Reports - Series C-25, for 1984, 1985 and 1986, to 1983 actual data, considering also the net gains and losses as a result of fuel switching and demolitions in those years.

[c]Oil includes kerosene.

[d]Other includes LP gas, coal, wood, other, and none.

Source: U.S. Bureau of the Census, Annual Housing Survey: General Housing Characteristics, 1981 and 1983.

III. Residential Gas Customers in 1986

Total Residential Customers

With net year-end customer additions of 452,800, the total number of gas customers[2] reached 46.95 million in 1986, a 1.0 percent increase over 1985 (see Table 3). The West, with 306,000 new customers, accounted for 64 percent of all new residential customer additions. The Midwest and Northeast regions each accounted for 18 percent of the new customer additions with 88,600 and 84,100, respectively.

Househeating Customers

About 42 million customers, 88.8 percent of all 1986 residential gas customers, were househeating customers. The gas househeating total residential gas customer ratio, i.e., market saturation, was constant from 1985. Househeating customer net additions totaled 403,500 in 1986 down from last year's substantial increase which had been due, in part, to revisions in prior year data. Net additions included existing gas base load customers who converted their non-gas heating system to gas, as well as customers added through new construction and conversions from alternative fuels.

Gas Househeating Unit Additions

The gas industry added 833,870 househeating units in 1986 (see Table 3 and Figure 4), a 10 percent increase from 1985. Of total additions, 685,360 wefrom new housing[3], an increase in new units of 13 percent from 1985. As a result, the share of househeating additions from new housing increased to 82 percent. The West and South showed the highest ratio of additions from new housing versus conversions, 96 percent and 83 percent, respectively. The Northeast showed only 60 percent of additions from new housing.

In 1986, 148,500 housing units were converted from an alternative fuel to natural gas (see Table 4), a decrease of 0.5 percent compared with last year's level of conversions. The actual number of 1986 conversions exceeded the forecast of 135,600 made by responding companies in 1985. This consistent level of conversions is believed to be a result of lower prices for heating oil (the main source of conversions), on the one hand, and a growing share of conversions from electricity on the other.

The respondents were asked to provide a breakdown of the converted units by fuel type. Based on these data, 104,894 units, or 71 percent, were conversions from fuel oil to gas. The share of fuel oil conversions has now dropped from 83 percent in 1983, 77 percent in 1984 and 76 percent in 1985. Propane and electricity accounted for 8 percent and 19 percent each with 11,822 and 27,811 units, respectively, while other (coal, wood, etc.) accounted for 3,984 (3 percent). Figure 5 shows how both the level of conversions from electricity and the share of electric conversions among all conversions to gas have grown since 1981--in fact, more than doubling since 1983.

Approximately 82 percent, or 121,818 conversions, were in four of the nine census divisions of the country--the Middle Atlantic, East North Central, South Atlantic and New England divisions. These same four divisions accounted for 94 percent of all conversions from fuel oil. Total fuel oil conversions decreased by 8 percent compared with last year. By contrast conversions from electricity showed a 34 percent increase compared to last year. The electricity conversions were greatest in the East North Central and East South Central divisions. Propane conversions remained about the same as last year.

As part of the survey, respondents were asked to project additions to the househeating inventory from both new construction and conversions for 1987 (see Table 5). The results indicate that utilities expect to add approximately 145,307 conversions, or slightly below the actual 1986 level. The projections for gas househeating additions from newly constructed units are even above the excellent results for 1986 at 780,473 units. This means that total househeating additions would increase by 11 percent.

Market Share

According to this year's househeating survey, the estimated market share for gas heating (as a percentage of total estimated housing units within the service areas of responding gas utilities) ranged from 38 percent to 86 percent regionally. The estimated market share as reported by each responding gas utility can be found in Appendix 1. The map in Figure 6 shows the estimated market share in the nine census divisions. The highest heating market share for natural gas is in the North Central division (86%). The lowest market shares are in the New England (38%) and Middle Atlantic (59%) and South Atlantic (58%) divisions, where oil heating was traditionally most prevalent.

Gas Consumption Per Unit

Respondents to the survey were asked to estimate the average annual gas consumption for both single and multi-family dwellings. Utilities representing 87 percent of all gas househeating customers responded to this portion in the survey. These responses were then used to develop the U.S. and regional

TABLE 3

RESIDENTIAL AND HOUSEHEATING CUSTOMERS OF GAS UTILITIES
AND 1986 HOUSEHEATING UNIT ADDITIONS,
BY STATE, AS OF DECEMBER 31, 1986

Region, Division and State	Residential Customers			1986 Househeating Unit Additions from New Housing and Conversions				
	TOTAL	HOUSE HEATING	PERCENT HEATING	TOTAL (100%)	NEW HOUSING NUMBER	(%)	CONVERSIONS NUMBER	(%)
United States	46,951,023	41,693,267	88.8%	833,870	685,360	82.2%	148,510	17.8%
NORTHEAST	9,584,484	6,257,613	65.2%	160,321	95,913	59.8%	64,408	40.2%
New England	1,697,570	1,181,417	69.6%	39,685	19,160	48.3%	20,526	51.7%
Connecticut	486,881	268,888	66.1%	9,920	5,301	53.4%	4,619	46.6%
Maine	12,159	12,159	100.0%	a	a	a	a	a
Massachusetts	1,068,875	738,872	69.1%	22,885	9,645	42.1%	13,241	57.9%
New Hampshire	9,992	8,210	82.2%	888	666	75.0%	222	25.0%
Rhode Island	103,498	138,922	75.7%	4,468	2,758	61.8%	1,782	38.2%
Vermont	17,845	15,168	89.0%	1,531	790	51.6%	742	48.4%
Middle Atlantic	7,986,915	5,076,196	64.2%	120,636	76,753	63.6%	43,883	36.4%
New Jersey	1,846,887	1,273,410	69.0%	65,740	46,899	71.3%	18,841	28.7%
New York	3,887,390	1,851,852	48.6%	28,150	16,689	59.3%	11,460	40.7%
Pennsylvania	2,252,717	1,951,734	86.6%	26,746	13,165	49.2%	13,581	50.8%
MIDWEST	14,465,292	13,822,186	95.6%	221,606	178,346	80.5%	43,260	19.5%
East North Central	10,436,640	9,887,418	94.7%	150,597	113,169	75.1%	37,428	24.9%
Illinois	3,118,106	2,889,159	90.1%	46,818	39,878	85.2%	6,940	14.8%
Indiana	1,199,770	1,148,455	95.1%	18,979	12,805	67.5%	6,174	32.5%
Michigan	2,439,473	2,363,995	96.9%	35,958	31,304	87.1%	4,654	12.9%
Ohio	2,641,637	2,608,188	98.4%	29,884	21,521	72.0%	8,364	28.0%
Wisconsin	1,037,654	973,780	93.8%	18,958	7,661	40.4%	11,297	59.6%
West North Central	4,028,651	3,934,768	97.7%	71,009	65,177	91.8%	5,832	8.2%
Iowa	682,803	664,778	97.4%	3,398	2,339	68.8%	1,059	31.2%
Kansas	719,397	711,584	98.9%	8,580	8,133	94.8%	448	5.2%
Minnesota	860,808	822,393	95.5%	29,173	26,451	90.7%	2,722	9.3%
Missouri	1,169,993	1,152,769	98.5%	21,284	20,884	98.1%	400	1.9%
Nebraska	411,262	404,594	98.4%	5,801	4,459	89.2%	543	10.8%
North Dakota	83,985	80,845	95.4%	1,173	682	58.1%	491	41.9%
South Dakota	100,482	98,684	98.2%	2,479	2,309	93.2%	170	6.8%
SOUTH	11,522,123	10,661,013	92.5%	170,462	140,711	82.5%	29,751	17.5%
South Atlantic	4,045,219	3,636,982	89.9%	103,471	83,490	80.7%	19,981	19.3%
Delaware	82,085	60,190	73.3%	1,240	272	21.9%	968	78.1%
District of Columbia	131,414	100,683	76.6%	2,000	200	10.0%	1,800	90.0%
Florida	417,814	336,497	80.5%	6,432	2,049	31.9%	4,383	68.1%
Georgia	1,164,915	1,146,118	98.4%	58,919	58,882	99.9%	37	0.1%
Maryland	753,290	610,934	81.1%	9,632	4,771	49.5%	4,860	50.5%
North Carolina	424,976	406,089	95.5%	10,665	5,148	48.2%	5,536	51.8%
South Carolina	243,647	225,348	92.5%	150	75	50.0%	75	50.0%
Virginia	473,858	419,788	88.7%	13,222	11,082	83.8%	2,140	16.2%
West Virginia	354,826	331,496	93.6%	1,192	1,010	84.8%	182	15.2%
East South Central	2,892,284	2,832,188	97.1%	28,536	20,362	71.4%	8,174	28.6%
Alabama	636,868	620,139	97.4%	8,788	6,284	71.5%	2,504	28.5%
Kentucky	592,325	567,173	95.8%	4,411	2,824	64.0%	1,586	36.0%
Mississippi	372,488	367,429	98.6%	5,111	4,311	84.3%	800	15.7%
Tennessee	490,532	477,447	97.3%	10,226	6,943	67.9%	3,284	32.1%
West South Central	5,384,780	4,991,843	92.7%	38,455	36,858	95.8%	1,596	4.2%
Arkansas	477,441	385,468	80.7%	1,684	1,684	100.0%	0	0.0%
Louisiana	917,173	874,882	95.3%	674	405	60.0%	270	40.0%
Oklahoma	813,489	783,370	96.3%	10,813	10,439	96.5%	374	3.5%
Texas	3,176,597	2,948,924	92.8%	25,363	24,411	96.2%	953	3.8%
WEST	11,359,124	10,952,455	96.4%	281,481	270,390	96.1%	11,091	3.9%
Mountain	2,857,153	2,747,775	96.2%	78,090	75,349	96.5%	2,740	3.5%
Arizona	557,882	479,625	86.0%	10,081	9,840	97.6%	241	2.4%
Colorado	944,879	944,764	100.0%	30,868	30,868	100.0%	0	0.0%
Idaho	186,944	183,578	96.9%	2,578	1,431	55.5%	1,147	44.5%
Montana	169,581	168,949	99.7%	1,765	1,097	62.2%	668	37.8%
Nevada	208,638	182,386	87.4%	10,133	9,459	93.3%	674	6.7%
New Mexico	344,587	344,587	100.0%	11,988	11,988	100.0%	0	0.0%
Utah	413,854	413,854	100.0%	10,381	10,381	100.0%	0	0.0%
Wyoming	110,868	110,112	99.3%	375	365	97.1%	11	2.9%
Pacific	8,501,971	8,204,680	96.5%	203,391	195,040	95.9%	8,351	4.1%
Alaska	64,189	64,189	100.0%	a	a	a	a	a
California	7,748,277	7,518,394	97.0%	182,718	182,404	99.8%	314	0.2%
Hawaii	29,253	29,253	100.0%	a	a	a	a	a
Oregon	279,240	256,245	91.8%	7,318	5,176	70.7%	2,143	29.3%
Washington	389,012	344,598	88.6%	13,355	7,461	55.9%	5,894	44.1%

a
Insufficient Data
Regional totals may not add due to rounding.

Figure 4

Househeating Unit Additions By Region

1984-1986

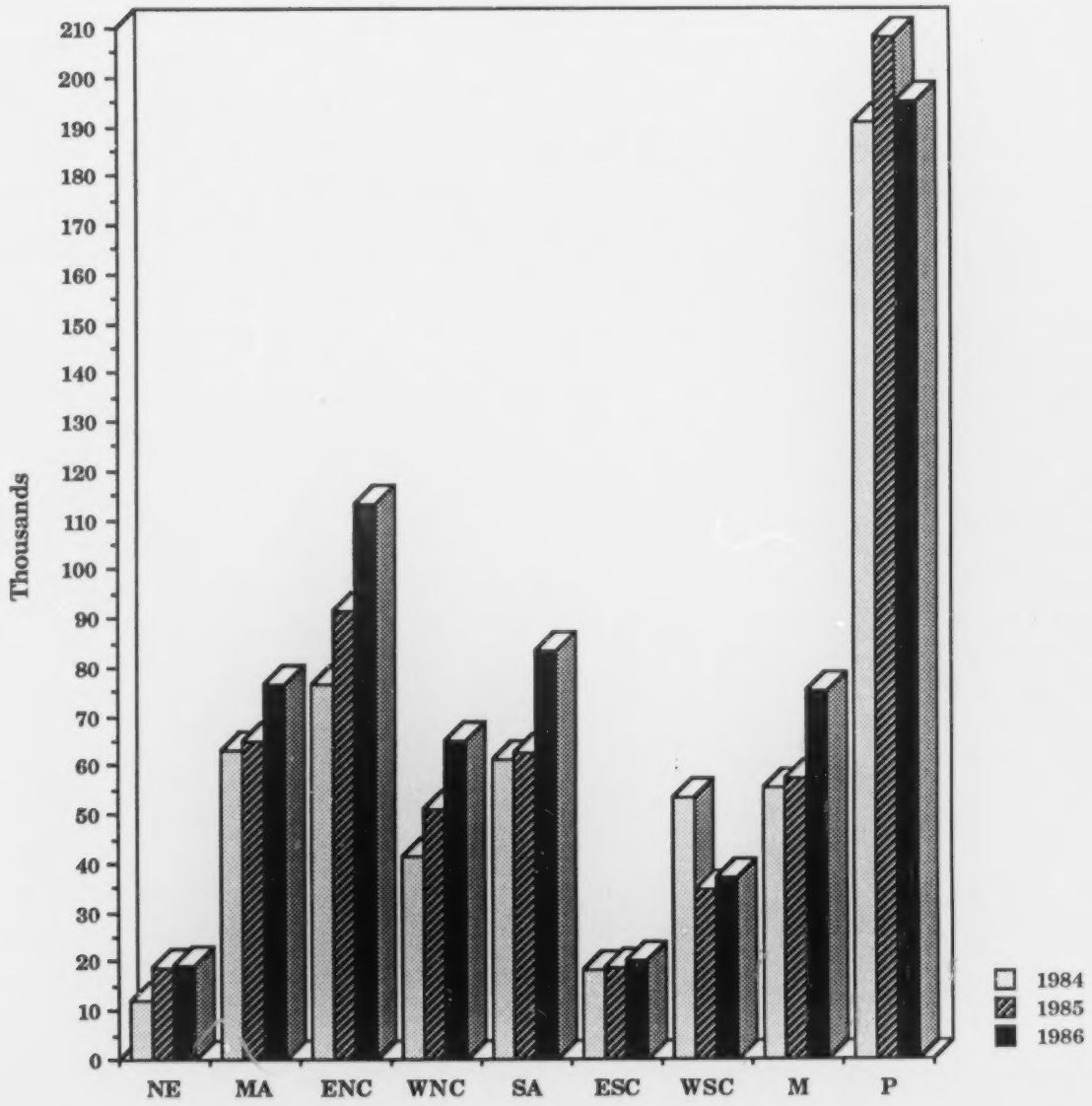


Table 4

HOUSEHEATING CONVERSIONS TO NATURAL GAS IN 1986 BY TYPE OF FUEL

Region	Oil		Propane		Electricity		Other[a]		Total	
	Units	%	Units	%	Units	%	Units	%	Units	%
United States	104,894	70.6	11,822	8.0	27,811	18.7	3,984	2.7	148,511	100
New England	20,206	98.4	120	0.6	185	0.9	15	0.1	20,526	13.8
Middle Atlantic	36,969	84.2	109	0.2	4,640	10.6	2,165	4.9	43,883	29.5
East North Central	24,595	65.7	5,167	13.8	6,540	17.5	1,126	3.0	37,428	25.2
West North Central	1,543	26.5	1,616	27.7	2,664	45.7	9	0.2	5,832	3.9
South Atlantic	16,387	82.0	377	1.9	3,025	15.1	192	1.0	19,981	13.5
East South Central	265	3.2	2,121	25.9	5,529	67.6	259	3.2	8,174	5.5
West South Central	0	0.0	855	53.5	741	46.5	0	0.0	1,596	1.1
Mountain	721	26.3	1,006	36.7	981	35.8	32	1.2	2,740	1.8
Pacific	4,208	50.4	450	5.4	3,507	42.0	185	2.2	8,351	5.6

[a]Other includes coal, wood, etc.

Figure 5

Househeating Conversions from Electricity to Gas

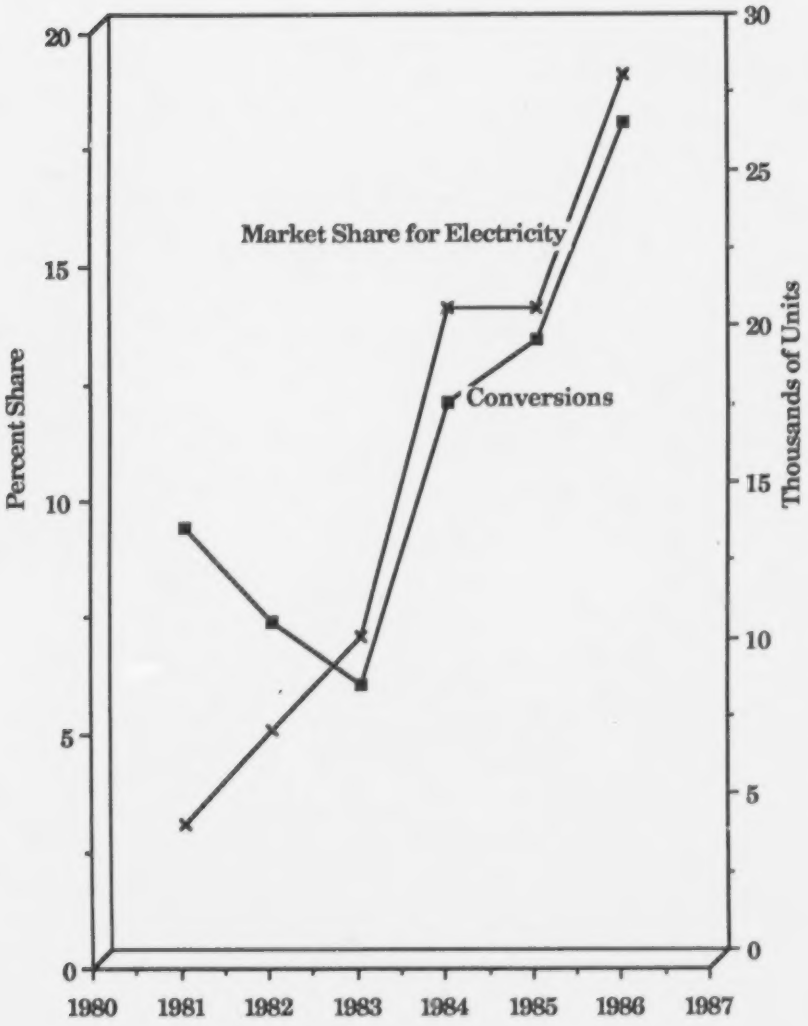


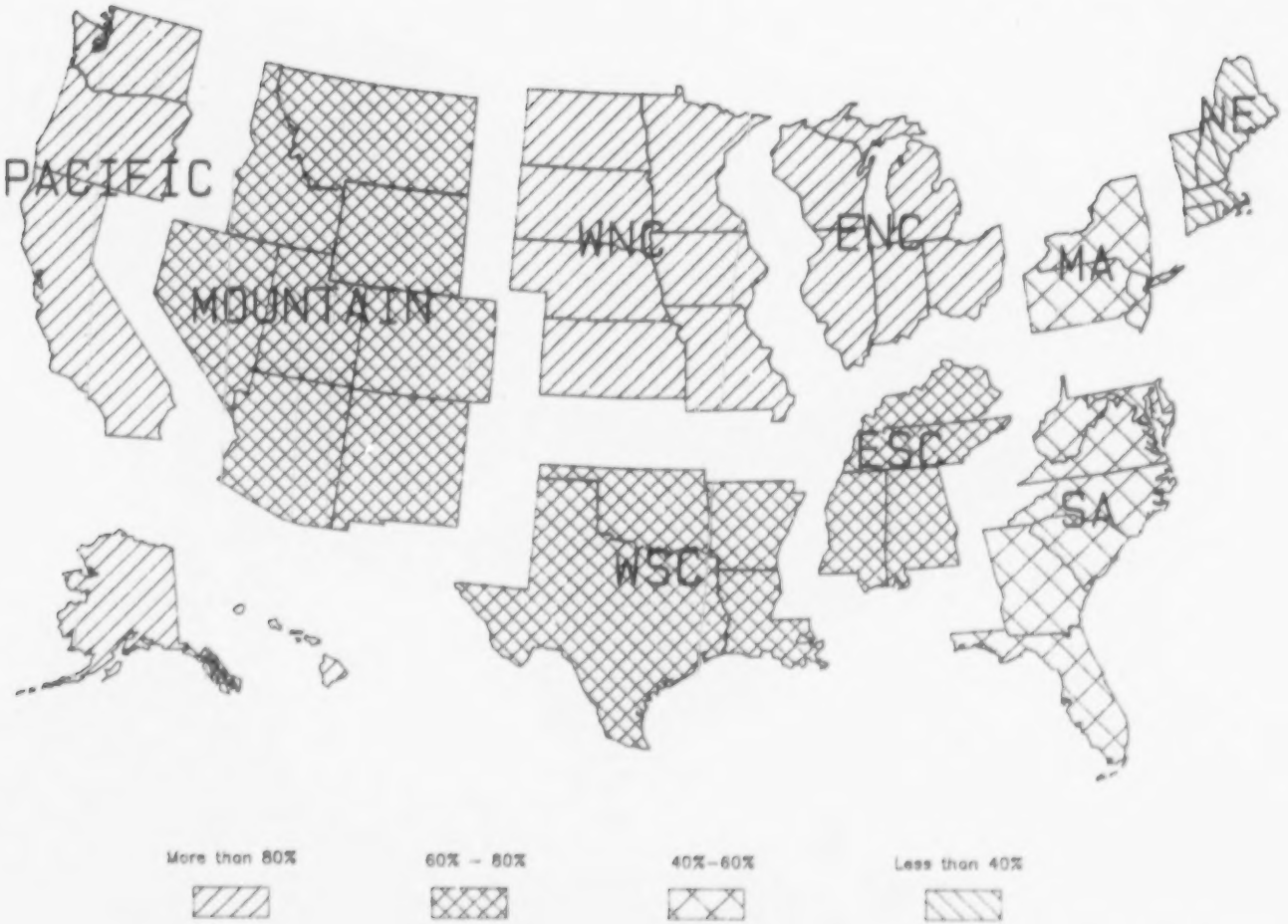
Table 5
1987 ANTICIPATED ADDITIONS
OF GAS HOUSEHEATING UNITS

Region, Division, and State	Total (1000's)	New Housing Number	New Housing (%)	Conversions Number	Conversions (%)
United States	925,780	780,473	84.3%	145,307	15.7%
NORTHEAST	276,578	212,928	77.0%	63,650	23.0%
New England	41,294	20,845	50.5%	20,449	49.5%
Connecticut	10,520	6,770	64.4%	3,750	35.6%
Maine	a	a	a	a	a
Massachusetts	23,232	9,075	39.1%	14,157	60.9%
New Hampshire	800	600	75.0%	200	25.0%
Rhode Island	5,492	3,800	69.2%	1,692	30.8%
Vermont	1,250	600	48.0%	650	52.0%
Middle Atlantic	235,284	192,083	81.6%	43,201	18.4%
New Jersey	166,883	167,125	89.5%	19,678	10.5%
New York	23,455	12,455	53.1%	11,000	46.9%
Pennsylvania	25,026	12,503	50.0%	12,523	50.0%
MIDWEST	192,059	156,278	81.4%	35,781	18.6%
East North Central	134,631	102,815	77.1%	30,816	22.9%
Illinois	40,760	34,850	85.5%	5,910	14.5%
Indiana	16,050	10,914	68.0%	5,136	32.0%
Michigan	34,836	30,083	86.4%	4,753	13.6%
Ohio	28,330	21,450	75.7%	6,880	24.3%
Wisconsin	14,655	6,518	44.5%	8,137	55.5%
West North Central	57,428	52,463	91.4%	4,965	8.6%
Iowa	2,463	1,615	65.6%	848	34.4%
Kansas	7,370	7,020	95.3%	350	4.7%
Minnesota	22,696	20,201	89.0%	2,495	11.0%
Missouri	19,650	19,200	97.7%	450	2.3%
Nebraska	2,609	2,469	94.6%	140	5.4%
North Dakota	1,038	500	48.5%	538	51.5%
South Dakota	1,610	1,458	90.6%	152	9.4%
SOUTH	133,499	111,236	83.3%	22,263	16.7%
South Atlantic	91,499	75,427	82.4%	16,072	17.6%
Delaware	655	330	50.4%	325	49.6%
District of Columbia	1,400	400	28.6%	1,000	71.4%
Florida	2,950	800	27.1%	2,150	72.9%
Georgia	57,350	57,300	99.9%	50	0.1%
Maryland	8,488	4,130	48.7%	4,358	51.3%
North Carolina	9,017	4,067	45.1%	4,950	54.9%
South Carolina	a	a	a	a	a
Virginia	11,159	7,970	71.4%	3,189	28.6%
West Virginia	480	430	89.6%	50	10.4%
East South Central	20,886	15,975	76.8%	4,831	23.2%
Alabama	5,281	4,575	86.6%	706	13.4%
Kentucky	4,510	3,300	73.2%	1,210	26.8%
Mississippi	3,935	3,300	83.9%	635	16.1%
Tennessee	7,000	4,800	67.8%	2,280	32.2%
West South Central	21,194	19,834	93.6%	1,360	6.4%
Arkansas	900	900	100.0%	a	a
Louisiana	880	780	79.5%	100	20.5%
Oklahoma	405	350	86.4%	55	13.6%
Texas	19,009	17,804	94.1%	1,125	5.9%
WEST	323,644	300,031	92.7%	23,613	7.3%
Mountain	76,668	61,156	79.8%	15,512	20.2%
Arizona	12,144	11,819	97.3%	325	2.7%
Colorado	21,518	21,518	100.0%	a	a
Idaho	2,010	1,250	62.2%	760	37.8%
Montana	1,590	1,030	64.8%	560	35.2%
Nevada	10,821	8,361	77.3%	2,460	22.7%
New Mexico	6,350	6,350	100.0%	a	a
Utah	21,995	10,593	48.2%	11,402	51.8%
Wyoming	240	235	97.9%	5	2.1%
Pacific	246,976	238,875	96.7%	8,101	3.3%
Alaska	a	a	a	a	a
California	224,865	224,225	99.7%	640	0.3%
Hawaii	a	a	a	a	a
Oregon	6,363	4,500	70.7%	1,863	29.3%
Washington	15,748	10,150	64.5%	5,598	35.5%

a
Insufficient data
Regional totals may not add due to rounding.

Figure 6

Gas Householeating Market Share By Region



average estimates on per unit gas use. Both categories were weighted by the number of residential gas customers for each responding utility in each state. In addition, the multi-family data represented a weighted average of dwellings with 2-4 units, and dwellings with 5 or more units (see Table 6).

Due to changes in the reporting methods of some utilities, particularly in the definition of base load and multi-family gas use and consumption per unit (as well as annual changes in heating degree day totals), consumption data from year to year are not always comparable. With this caveat in mind, a review of 1986 combined average consumption data (U.S. average weighted by customer and dwelling type) indicated that total per unit gas consumption was 82.3 Mcf for all units, while househeating was 53.1 Mcf and base load consumption was 29.2 Mcf. In single family dwellings, gas consumption for househeating was 70.8 Mcf, while base load consumption was 34.1 Mcf. By comparison the average multi-family dwelling unit in buildings with 2-4 units consumed 45.7 Mcf and 27.6 Mcf, respectively, for househeating and base load use. In dwellings with more than 5 units, gas consumption per unit for househeating was 38 Mcf and base load consumption per unit was 24.6 Mcf.

Climatic conditions have the most significant impact on gas use for househeating purposes, but the size and thermal integrity of the structure must also be considered. Reflecting these factors, single family unit consumption was highest for househeating in the Midwest region at 95.1 Mcf, and lowest in the West region at 43.6 Mcf. Gas consumption for househeating in multi-family dwellings with 2-4 units followed a similar pattern with per unit consumption in the Midwest region at 74 Mcf, with a low of 25.2 Mcf in the West region. Table 6 includes weather data for each region in the form of annual heating degree days for calendar year 1986 and the 30-year normal heating degree days. The degree-day data are weighted by gas househeating customers. Heating degree-day accumulation was down in 1986 compared with the 30-year normal. The Northeast was the only region with higher degree-day accumulation in 1986 versus 1985.

Gas consumption for base load use, which may include water heating, cooking, clothes drying and air conditioning, will vary with the size and type of appliance in the unit. Base load consumption also has some seasonality reflecting lifestyle preferences under the various climatic conditions. For single family dwellings, base load consumption was lowest in the West region at 30.6 Mcf, and highest in the Northeast region at 42 Mcf. Base load consumption per unit for multi-family dwellings of 2-4 units ranged from 23.6 Mcf in the West to 32.2 Mcf in the Northeast.

Conservation

Companies representing 69 percent of the gas househeating customers indicated that in 1986 conservation, measured as the total percentage decline in consumption per househeating customer not explained by the weather, has reduced consumption to an average of 27.4 percent below the pre-1973 level (down from 25 percent in 1985). Conservation percentages reported by each company were weighted by househeating customer data from each company to derive regional and national conservation estimates. The magnitude of conservation ranged from a high of 33.3 percent below the pre- 1973 level of consumption in the Pacific division to a low of 19.9 percent in the New England division (see Table 7).

Again this year the survey included a question on base load conservation. Almost 132 companies, primarily in the Midwest and Northeast regions, indicated that base load consumption per customer had moderated since 1973--mostly through the introduction of more efficient appliances, lower water heater settings, water heater insulation, and pilotless ignitions. However, fewer than 30 companies responded with quantitative data describing base load conservation (as the change in third quarter consumption per customer over a given period of time, i.e., 1973 and 1986). All of the companies that responded to this question also indicated that their base load consumption did not measurably vary with heating degree days. This response probably reflects the difficulty in developing reliable data on base load consumption as much as it does the fact that base load consumption is a smaller and less variable component of overall average gas consumption per home.

Gas Cooling

This year for the first time the annual househeating questionnaire contained a section on the residential gas space cooling market. The survey was intended to develop a basic data base on the installed residential gas cooling capacity, and to derive a general impression of the extent to which gas utilities have cooling data.

Fifty-one of the 148 companies that replied to the 1986 Househeating Survey provided at least some quantitative responses. The quantitative part of the cooling survey requested data on the installed tonnage, number of units and annual gas sales volumes for single family and multi-family homes.

Installed residential gas cooling tonnage totalled 433,000 tons as of 1985. The number of installed res-

Table 6

1986 AVERAGE ANNUAL GAS CONSUMPTION/UNIT[a]
BY REGION (Mcf)

Region	Single Family	Multi-Family 2-4 Units	Multi-Family 5+ Units	Combined[b] Average	Heating Degree Days[c] 1986	Heating Degree Days[c] 30-Year Normal
Northeast						
Heating	93.0	66.6	58.5	75.1	5,328	5,437
Base load	42.0	32.2	28.5	35.0		
Total	135.0	98.8	87.0	110.1		
Midwest						
Heating	95.1	74.0	60.0	78.3	5,743	6,035
Base load	34.8	28.2	24.2	29.7		
Total	129.9	102.2	84.2	108.0		
South						
Heating	54.5	44.2	38.9	47.0	2,573	2,781
Base load	29.4	26.8	24.7	27.3		
Total	83.9	71.0	53.6	74.3		
West						
Heating	43.6	25.2	19.8	30.3	2,054	2,781
Base load	30.6	23.6	21.5	25.6		
Total	74.2	48.8	41.3	55.9		
U.S. Average						
Heating	70.8	45.7	38.0	53.1	3,865	4,428
Base load	34.1	27.6	24.6	29.2		
Total	104.9	73.3	62.6	82.3		

[a]Results for 1986 are based on responses from 170 different markets.

[b]Weighted by customer and dwelling type.

[c]Calendar year heating degree days as reported are then weighted by gas househeating customers (see Appendix 1 for detailed definitions). The 30-year normal are also weighted by gas househeating customers as opposed to total population.

Table 7

1986 AVERAGE CONSERVATION BY REGION
(Percent Decline from 1973 Baseline)

Region	Conservation[a] (%)
Northeast	22.6
New England	19.9
Middle Atlantic	23.2
North Central	28.2
East North Central	28.3
West North Central	27.5
South	24.0
South Atlantic	22.7
East South Central	21.3
West South Central	26.0
West	33.2
Mountain	33.0
Pacific	33.3
United States	27.4

[a]The total percent decline in consumption normalized for weather from the pre-embargo 1973 baseline. Results for 1985 are based on individual company responses from 132 different markets and are weighted by househeating customers.

idential gas units, as reported by a slightly different sub-sample, totalled 171,000 as of 1985. Gas consumption, as reported by yet another sub-sample, totaled 15 Bcf in 1985. The fact that each total reflects a different set of responding companies does not allow for the totals to be readily cross-checked.

Totals for 1986 alone were slightly sketchier. Installed new tonnage was 8,500 tons and installed units totalled about 1,700 in 1986. The new volume of gas for cooling, as reported by the sub-sample, totaled 391 million cubic feet.

Prices/Heating Bills

Natural gas prices declined in eight of the nine census divisions in 1986. The largest decline, depicted in Table 8, was registered in the Pacific division which decreased from $5.83/MMBtu or 15.1 percent. The only increase was in the South Atlantic which showed a negligible increase of $0.12/MMBtu or 2 percent. Overall, the average U.S. gas price was down from $5.54/MMBtu to $5.08/MMBtu or 8.3 percent. In contrast, this compares favorably to an increase of $0.85/MMBtu to $20.05/MMBtu or 4.4 percent in the average U.S. price of electricity. Fuel oil and propane prices declined from $6.48/MMBtu and $9.12/MMBtu to $5.14/MMBtu and $9.01/MMBtu or 20.7 and 1.2 percent, respectively.

Strongly correlated with the natural gas price is the annual gas househeating bill for a single family home shown in Table 9. This measure declined in all nine divisions. These reductions ranged from 1.7 percent in the South Atlantic and East North Central divisions to 17.9 percent in the West North Central. Nationally, the average gas househeating bill declined from $429.01 to $402.31 or 6.2 percent.

FOOTNOTES

[1] Source: U.S. Department of Commerce, Bureau of the Census, *Construction Reports--Housing Starts*, Series C-20, April 1987.

[2] At most utilities a residential customer is defined as an individual or organization purchasing gas for domestic purposes (heating, cooking) at one location under one rate classification, i.e., a meter represents a single customer.

[3] Because of inconsistencies in the definition of a completed housing unit (used by the Bureau of the Census) and an online gas customer (used by a gas utility), the number of gas heated housing units added from new construction reported in the survey does not match the Census figures shown in Table 1.

Table 8

1985 and 1986 Divisional Fuel Price Comparisons[a]
($/MMBtu)

DIVISION	1985	1986	% Change
United States			
Gas	$5.54	$5.08	-8.3%
Electricity	$19.20	$20.05	4.4%
Propane	$9.12	$9.01	-1.2%
Fuel Oil	$6.48	$5.14	-20.7%
New England			
Gas	$7.11	$6.17	-13.2%
Electricity	$26.40	$23.96	-9.2%
Propane	$11.19	$8.94	-20.1%
Fuel Oil	$6.84	$5.38	-21.3%
Middle Atlantic			
Gas	$6.49	$6.05	-6.8%
Electricity	$23.67	$22.31	-5.7%
Propane	$11.32	$10.19	-10.0%
Fuel Oil	$7.60	$5.00	-34.2%
East North Central			
Gas	$5.33	$4.97	-6.8%
Electricity	$17.91	$18.05	0.8%
Propane	$9.05	$8.50	-6.1%
Fuel Oil	$7.13	$5.27	-26.1%
West North Central			
Gas	$4.56	$4.02	-11.8%
Electricity	$16.15	$17.86	10.6%
Propane	$7.05	$6.07	-13.9%
Fuel Oil	$6.22	$4.92	-20.9%
South Atlantic			
Gas	$5.97	$6.09	2.0%
Electricity	$21.17	$18.44	-12.9%
Propane	$10.46	$10.00	-4.4%
Fuel Oil	$7.40	$5.12	-30.8%
East South Central			
Gas	$5.28	$4.88	-7.6%
Electricity	$15.05	$16.42	9.1%
Propane	$9.08	$8.33	-8.3%
Fuel Oil	$6.27	$4.45	-29.0%
West South Central			
Gas	$4.95	$4.84	-2.2%
Electricity	$20.16	$20.30	0.7%
Propane	$8.15	$8.19	0.5%
Fuel Oil	$4.37	$3.70	-15.3%
Mountain			
Gas	$5.07	$4.46	-12.0%
Electricity	$17.65	$21.28	20.6%
Propane	$8.79	$8.53	-3.0%
Fuel Oil	$6.00	$3.75	-37.5%
Pacific			
Gas	$5.83	$4.95	-15.1%
Electricity	$18.47	$22.80	23.4%
Propane	$8.61	$10.80	25.4%
Fuel Oil	$6.16	$6.70	8.8%

[a] Weighted by householding customers.

Table 9

1985 and 1986 Divisional Gas Househeating Bill Comparisons[a]

Division	1985 Gas Heating Bill	1986 Gas Heating Bill	% Change
United States	$429.01	$402.31	-6.2%
New England	$733.51	$686.36	-6.4%
Middle Atlantic	$653.55	$636.07	-2.7%
East North Central	$582.60	$556.66	-4.5%
West North Central	$462.94	$380.10	-17.9%
South Atlantic	$400.11	$393.26	-1.7%
East South Central	$391.54	$385.02	-1.7%
West South Central	$245.89	$229.13	-6.8%
Mountain	$328.47	$312.52	-4.9%
Pacific	$211.71	$186.09	-12.1%

[a] Weighted by househeating customers.

APPENDIX 1

1986 HOUSEHEATING CUSTOMER AND CONSUMPTION DATA BY COMPANY

This appendix presents gas househeating data obtained from a survey of 149 companies on a regional, state and company-by-company basis. Column 1 of the Appendix shows reported residential and househeating customers. Residential and househeating customer data in the 1986 survey have been reconciled with the A.G.A. Uniform Statistical Reports, which form the basis of the A.G.A. Gas Facts publication. A gas customer is equal to a meter for billing purposes, while a househeating unit refers to the number of actual residences which use gas for space heating. Column 2 provides heating and average base load consumption per customer. Column 3 shows the gas heating market share, defined as the percentage of total dwelling units in the franchise areas of gas utilities that are served by gas for househeating as opposed to other primary heating fuels.

The market share should not be confused with househeating saturation, which is the number of gas househeating customers on a given system. It should also be noted that reported market share figures, in particular, may be inconsistent in some cases due to different interpretations for an individual utility from year to year. This question was revised in 1981 so that data reported in subsequent years may remain consistent. Column 4 shows the number of heating degree days (a heating degree day is a measure of the coldness of the weather, based on the extent to which the daily mean temperature falls below a reference temperature, usually 65° F).

APPENDIX 1 -- CUSTOMERS AND CONSUMPTION

DIVISION / STATE / COMPANY	RESIDENTIAL CUSTOMERS YEAR-END 1986	HOUSEHEATING CUSTOMERS YEAR-END 1986	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) HEATING	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) BASELOAD	GAS-HTG MKT. SHARE VS. ALL FUELS	HEATING DEGREE DAYS 1986	HEATING DEGREE DAYS 30 YEAR NORMAL
NEW ENGLAND							
CONNECTICUT							
SOUTHERN CONNECTICUT GAS CO.	130,652	73,586	83.1	29.8	40.0%	5,489	5,501
NORTHEAST UTILITIES	147,300	97,430	86.2	37.5	16.0%	6,030	6,166
CONNECTICUT NATURAL GAS	121,256	88,239	85.0	35.0	43.0%	6,409	6,174
MASSACHUSETTS							
LOWELL GAS CO.	51,738	48,110	96.0	39.0	56.0%	6,189	6,089
FALL RIVER GAS CO.	37,907	32,270	100.0	30.0	78.0%	6,145	6,070
BOSTON GAS CO.	453,269	238,897	106.0	36.0	36.0%	5,662	5,634
COLONIAL GAS CO.	39,649	35,057	85.0	35.0	31.9%	5,884	6,525
COMMONWEALTH GAS CO.	194,578	159,739	120.0	30.0	40.0%	6,627	6,533
ESSEX COUNTY GAS CO.	29,294	22,489	80.0	25.0	50.0%	6,885	6,500
BAY STATE GAS CO.	192,100	142,400	89.0	36.0	33.6%	5,930	5,940
MAINE							
NORTHERN UTILITIES	12,300	5,000	89.0	36.0	5.0%	6,888	7,136
NEW HAMPSHIRE							
NORTHERN UTILITIES	9,000	7,200	89.0	36.0	13.0%	6,194	6,340
RHODE ISLAND							
PROVIDENCE GAS CO.	133,605	98,721	93.0	26.0	41.0%	5,618	5,900
VALLEY GAS CO.	45,779	33,912	74.9	19.9	44.8%	6,524	6,440
VERMONT							
VERMONT GAS SYSTEMS	14,480	12,684	96.0	37.0	na	7,473	7,876
MIDDLE ATLANTIC							
NEW JERSEY							
SOUTH JERSEY GAS CO.	166,686	135,167	70.6	30.7	32.0%	4,707	4,797
ELIZABETHTOWN GAS CO.	196,994	122,480	82.9	34.7	60.0%	4,954	4,965
PUBLIC SERVICE ELECTRIC & GAS	1,241,154	786,233	104.0	35.0	62.0%	4,699	4,990
NEW JERSEY NATURAL GAS COMPANY	241,973	205,491	78.5	36.2	40.0%	4,919	5,354
NEW YORK							
NEW YORK STATE ELECTRIC & GAS	114,065	105,125	122.0	43.0	82.5%	7,300	7,285
ROCHESTER GAS & ELECTRIC	227,092	201,227	93.1	34.4	na	6,742	6,652
CONSOLIDATED EDISON CO.	932,961	173,404	125.0	83.0	na	4,021	4,335
ST. LAWRENCE GAS CO.	9,925	9,047	126.0	32.0	79.0%	8,090	8,329
CENTRAL HUDSON GAS & ELECTRIC	46,197	31,684	65.0	50.0	18.0%	6,312	6,360
NATIONAL FUEL GAS DIST.	464,482	446,884	93.5	38.0	85.5%	6,607	6,678
COLUMBIA GAS OF NEW YORK	59,381	54,496	75.0	40.0	70.0%	6,940	7,282
ORANGE & ROCKLAND UTILITIES	88,679	83,497	111.0	41.0	56.0%	5,806	5,980
BROOKLYN UNION GAS CO.	1,055,163	352,157	89.0	42.0	51.1%	4,515	4,900
PENNSYLVANIA							
NORTH PENN GAS CO.	27,931	27,815	74.0	39.0	na	6,885	7,334
PEOPLES NATURAL GAS CO.	302,315	294,689	91.0	49.0	na	5,525	5,950
EQUITABLE RESOURCES	231,190	226,903	80.0	33.0	28.0%	5,504	5,950
PENNSYLVANIA GAS & WATER	108,745	86,676	137.0	24.0	38.5%	6,192	6,300
PHILADELPHIA GAS WORKS	509,495	399,846	113.0	48.0	72.0%	4,536	4,600
COLUMBIA GAS OF PA	305,813	289,334	70.0	40.0	72.0%	5,481	5,717
PIKE COUNTY LIGHT & POWER	886	833	99.0	38.0	31.0%	5,806	5,980
PHILADELPHIA ELECTRIC CO.	293,600	225,010	110.0	28.0	39.0%	4,911	4,992
NATIONAL FUEL GAS DIST.	185,781	183,524	97.1	35.5	80.2%	6,148	6,551
UGI CORPORATION	190,063	122,019	80.8	28.8	24.?%	5,482	5,480
EAST NORTH CENTRAL							
ILLINOIS							

APPENDIX 1 -- CUSTOMERS AND CONSUMPTION

DIVISION / STATE / COMPANY	RESIDENTIAL CUSTOMERS YEAR-END 1986	HOUSEHEATING CUSTOMERS YEAR-END 1986	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) HEATING	BASELOAD	GAS-HTG MKT. SHARE VS. ALL FUELS	HEATING DEGREE DAYS 1986	30 YEAR NORMAL
CENTRAL ILLINOIS LIGHT CO.	168,522	164,504	120.0	40.0	90.0%	5,710	6,226
IOWA-ILLINOIS GAS & ELECTRIC	58,585	56,294	81.9	35.6	85.0%	5,816	6,274
NORTH SHORE GAS CO.	99,107	94,260	146.0	43.0	91.0%	6,564	6,455
UNITED CITIES GAS CO.	17,647	17,647	79.0	20.0	na	5,253	5,654
CENTRAL ILLINOIS PUBLIC SERV.	140,051	136,661	102.9	27.1	74.8%	5,258	5,654
NORTHERN ILLINOIS GAS CO.	1,399,813	1,339,485	122.0	32.0	86.0%	5,856	6,177
PEOPLES GAS LIGHT & COKE	807,448	576,638	130.0	37.0	94.0%	6,564	6,455
ILLINOIS POWER CO.	349,691	339,809	83.7	20.7	85.0%	5,225	5,474
WISCONSIN POWER & LIGHT CO.	3,342	3,233	92.0	na	na	na	na
INDIANA							
SOUTHERN INDIANA GAS & ELECTRIC	61,423	60,487	104.1	40.9	64.0%	4,386	4,755
HOOSIER GAS CORP.	20,564	20,372	79.8	24.3	na	4,515	4,658
NORTHERN INDIANA PUBLIC SERVICE	510,156	479,271	89.6	34.9	81.7%	6,198	6,500
CITIZENS GAS & COKE	206,638	197,480	95.0	42.0	75.0%	5,279	5,577
OHIO VALLEY GAS CORP.	21,758	21,364	105.0	26.0	85.0%	5,310	5,801
LAWRENCEBURG GAS CO.	3,676	3,635	na	na	na	4,867	5,247
INDIANA GAS CO.	295,335	290,496	87.5	28.8	90.0%	5,303	5,650
MICHIGAN							
MICHIGAN POWER CO.	66,870	66,082	85.8	27.7	68.0%	41	6,228
WISCONSIN PUBLIC SERVICE	4,382	4,173	90.0	31.0	na	7,644	8,022
CONSUMERS POWER CO.	1,163,952	1,130,833	90.1	38.0	90.0%	6,785	6,808
MICHIGAN CONSOLIDATED GAS	930,237	949,939	110.0	45.0	67.6%	6,672	6,808
MICHIGAN GAS UTILITIES CO.	103,134	101,293	80.5	37.2	68.5%	4,388	4,722
NORTHERN STATES POWER CO.	3,700	3,616	92.7	32.7	46.3%	9,200	9,023
OHIO							
OHIO GAS CO.	28,387	28,387	94.0	35.0	77.6%	5,977	6,368
NATIONAL GAS & OIL CORP.	17,527	17,527	65.1	30.7	na	5,948	6,089
EAST OHIO GAS CO.	940,000	930,423	100.0	40.0	98.0%	6,044	6,255
NATIONAL FUEL GAS DIST.	5,334	5,265	97.1	33.5	80.2%	6,148	6,551
DAYTON POWER & LIGHT	248,189	243,655	78.0	28.0	na	5,382	5,790
CINCINNATI GAS & ELECTRIC	273,798	253,731	na	na	na	4,867	5,247
WEST OHIO GAS CO.	50,117	49,091	93.0	26.0	85.4%	5,544	5,910
COLUMBIA GAS OF OHIO	1,014,636	1,004,771	70.0	40.0	72.0%	5,613	5,987
WISCONSIN							
WISCONSIN POWER & LIGHT CO.	96,371	90,227	92.0	20.0	na	na	na
WISCONSIN PUBLIC SERVICE	144,579	137,285	90.0	31.0	na	7,644	8,022
WISCONSIN SOUTHERN GAS CO.	36,270	35,072	89.0	31.0	81.0%	7,132	7,113
WISCONSIN FUEL & LIGHT CO.	35,671	33,948	na	na	74.0%	7,747	8,146
WISCONSIN GAS CO.	393,378	350,399	94.0	33.0	78.0%	6,788	7,364
NORTHERN STATES POWER CC	37,030	33,094	82.4	22.4	20.1%	7,829	7,855
MADISON GAS & ELECTRIC	68,181	62,363	87.0	30.4	72.8%	7,266	7,642
WISCONSIN NATURAL GAS CO.	216,020	202,998	100.0	30.0	71.0%	6,963	7,503
WEST NORTH CENTRAL							
IOWA							
MIDWEST GAS COMPANY	124,760	122,200	86.0	23.0	99.0%	6,218	6,554
CEDAR FALLS UTILITIES	9,003	8,665	na	na	70.0%	6,006	6,370
IOWA ELECTRIC LIGHT & POWER	109,771	107,357	85.5	26.0	na	5,917	6,183
IOWA-ILLINOIS GAS & ELECTRIC	148,186	143,125	77.6	33.5	85.0%	6,361	6,505
IOWA PUBLIC SERVICE CO.	231,412	222,888	na	na	na	6,771	7,211
KANSAS							
MIDWEST ENERGY, INC.	9,141	9,141	92.6	30.8	90.0%	4,617	5,300
K N ENERGY, INC.	23,218	22,754	68.0	38.0	na	5,103	5,866

APPENDIX 1 -- CUSTOMERS AND CONSUMPTION

DIVISION / STATE / COMPANY	RESIDENTIAL CUSTOMERS YEAR-END 1986	HOUSEHEATING CUSTOMERS YEAR-END 1986	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) HEATING	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) BASELOAD	GAS-HTG MKT. SHARE VS. ALL FUELS	HEATING DEGREE DAYS 1986	HEATING DEGREE DAYS 30 YEAR NORMAL
KPL GAS SERVICE	511,303	511,303	70.0	30.0	90.0%	4,610	5,319
ARKANSAS LOUISIANA GAS CO.	18,671	13,480	51.2	30.8	61.3%	4,068	4,787
MINNESOTA							
CITY OF DULUTH	19,650	12,818	140.0	45.0	85.0%	9,401	9,842
MINNEGASCO, INC.	409,689	400,086	130.6	35.0	82.0%	na	na
IOWA PUBLIC SERVICE CO.	51,330	50,982	77.0	31.0	na	7,535	8,013
NORTHERN STATES POWER CO.	225,970	209,677	108.0	21.0	72.0%	7,829	8,007
AUSTIN UTILITIES	8,668	8,532	130.0	2.9	98.0%	7,175	7,600
MISSOURI							
ASSOCIATED NATURAL GAS CO.	37,556	37,556	87.0	na	na	3,623	4,000
CITY OF SPRINGFIELD	52,523	52,523	66.0	31.0	87.3%	4,257	4,660
LACLEDE GAS CO.	539,348	523,181	65.2	40.4	80.0%	4,376	4,833
KPL GAS SERVICE	394,838	394,838	82.0	30.0	90.0%	4,610	5,319
NEBRASKA							
KPL GAS SERVICE	3,142	3,142	82.0	30.0	90.0%	4,610	5,319
NORTHWESTERN PUBLIC SERVICE	32,361	32,252	78.4	39.2	99.5%	6,212	6,671
METROPOLITAN UTILITIES DISTRICT	128,086	125,057	73.0	43.0	85.0%	5,730	6,592
K N ENERGY, INC.	80,101	78,499	73.0	30.0	na	6,066	6,743
IOWA PUBLIC SERVICE CO.	3,460	3,405	na	na	na	6,657	7,242
HASTINGS UTILITIES	7,947	7,947	103.7	na	99.0%	4,726	5,974
MINNEGASCO, INC.	104,914	103,312	73.6	30.0	94.0%	5,393	6,192
NORTH DAKOTA							
MONTANA-DAKOTA UTILITIES CO.	63,576	62,940	87.4	28.3	91.0%	8,476	9,197
NORTHERN STATES POWER CO.	19,244	15,828	107.0	32.0	46.0%	8,953	9,343
SOUTH DAKOTA							
IOWA PUBLIC SERVICE CO.	7,264	7,041	na	na	na	6,657	7,242
NORTHWESTERN PUBLIC SERVICE	25,296	24,164	88.5	29.5	99.5%	8,018	8,156
MONTANA-DAKOTA UTILITIES CO.	26,802	26,533	63.3	28.3	91.0%	7,017	7,321
MINNEGASCO, INC.	35,415	35,143	89.0	32.0	90.0%	7,331	7,942
SOUTH ATLANTIC							
DISTRICT OF COLUMBIA							
WASHINGTON GAS LIGHT CO.	131,414	99,703	91.0	32.0	72.4%	4,264	3,965
DELAWARE							
DELMARVA POWER & LIGHT CO.	72,685	52,037	74.1	28.3	37.0%	5,077	4,952
FLORIDA							
PEOPLES GAS SYSTEM, INC.	149,477	116,834	19.0	18.0	38.0%	131	199
GEORGIA							
ATLANTA GAS LIGHT COMPANY	927,871	900,963	47.0	40.0	75.0%	2,509	3,040
UNITED CITIES GAS CO.	58,961	58,961	45.5	23.7	na	1,914	2,443
MARYLAND							
BALTIMORE GAS & ELECTRIC	482,394	351,124	80.4	40.5	38.9%	4,632	4,710
WASHINGTON GAS LIGHT CO.	227,233	219,399	85.1	32.6	68.0%	4,130	3,903
COLUMBIA GAS OF MD	25,773	22,034	70.0	40.0	71.0%	5,299	5,404
NORTH CAROLINA							
PIEDMONT NATURAL GAS CO.	164,815	159,512	71.4	17.6	na	3,520	3,713
NORTH CAROLINA NATURAL GAS	60,704	58,359	58.0	24.0	na	na	3,100
CITY OF WILSON	6,059	5,704	66.2	3.6	24.0%	na	na
PUBLIC SERVICE OF NORTH CAROLIN	167,046	157,525	79.4	24.2	28.4%	3,343	3,336
SOUTH CAROLINA							
SOUTH CAROLINA ELECTRIC & GAS	175,443	157,898	54.8	16.0	51.0%	2,151	2,396
UNITED CITIES GAS CO.	3,634	3,634	47.0	23.0	na	3,043	3,239
PIEDMONT NATURAL GAS CO.	49,878	48,999	71.7	12.1	na	3,260	3,405

APPENDIX 1 -- CUSTOMERS AND CONSUMPTION

DIVISION / STATE / COMPANY	RESIDENTIAL CUSTOMERS YEAR-END 1986	HOUSEHEATING CUSTOMERS YEAR-END 1986	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) HEATING	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) BASELOAD	GAS-HTG MKT. SHARE VS. ALL FUELS	HEATING DEGREE DAYS 1986	HEATING DEGREE DAYS 30 YEAR NORMAL
PEOPLES GAS CO. OF S.C.	6,817	6,817	42.0	16.0	na	2,493	2,669
VIRGINIA							
UNITED CITIES GAS CO.	9,218	9,218	83.9	28.9	na	4,273	4,225
CITY OF CHARLOTTESVILLE	11,512	8,158	110.0	35.0	na	4,787	4,200
CITY OF RICHMOND	66,967	52,845	47.5	34.4	na	3,761	3,993
COLUMBIA GAS OF VA	36,908	35,981	70.0	40.0	70.0%	4,455	4,735
ROANOKE GAS CO.	31,276	29,219	na	na	na	4,140	4,315
CITY OF DANVILLE	14,019	12,575	76.7	22.4	70.7%	3,740	3,856
VIRGINIA NATURAL GAS	122,033	101,335	75.0	37.0	28.0%	3,218	3,421
WASHINGTON GAS LIGHT CO.	181,117	170,457	78.4	28.3	56.7%	4,264	3,965
WEST VIRGINIA							
HOPE GAS CO.	101,276	96,516	76.4	31.3	na	4,615	4,957
MOUNTAINEER GAS CO.	181,917	161,906	80.0	34.0	89.0%	4,700	4,613
EAST SOUTH CENTRAL							
ALABAMA							
ALABAMA GAS CORP.	361,852	350,809	54.0	29.0	73.0%	2,535	2,963
CITY OF FLORENCE	7,358	7,358	na	na	50.0%	2,700	na
DECATUR UTILITIES	4,153	4,108	44.0	11.0	22.0%	2,714	3,302
SOUTHEAST ALABAMA GAS	31,202	31,202	60.0	18.0	na	1,798	2,039
CITY OF HUNTSVILLE	24,517	24,517	na	na	62.0%	2,994	3,341
KENTUCKY							
COLUMBIA GAS OF KY	103,158	102,454	60.0	40.0	70.0%	4,500	4,772
UNION LIGHT, HEAT & POWER	55,948	52,922	na	na	na	4,867	5,247
DELTA NATURAL GAS CO.	24,874	24,874	55.0	30.0	na	4,406	4,808
LOUISVILLE GAS & ELECTRIC	217,338	212,693	66.0	35.0	na	4,112	4,525
WESTERN KENTUCKY GAS CO.	127,810	114,373	61.9	33.3	na	3,978	4,380
MISSISSIPPI							
ENTEX, INC.	96,197	92,156	35.0	27.0	82.0%	2,200	2,536
MISSISSIPPI VALLEY GAS CO.	201,787	201,787	73.9	30.5	93.0%	2,490	na
TENNESSEE							
MIDDLE TENNESSEE NATURAL GAS	11,669	11,160	53.0	12.0	64.0%	3,471	3,696
UNITED CITIES GAS CO.	42,619	42,619	65.1	26.0	na	3,816	3,847
MEMPHIS LIGHT, GAS & WATER	229,376	221,118	79.0	3.0	76.0%	2,789	3,227
NASHVILLE GAS CO.	61,420	60,190	85.0	30.0	26.0%	3,471	3,756
WEST SOUTH CENTRAL							
ARKANSAS							
ARKANSAS WESTERN GAS CO.	68,156	66,793	50.0	33.4	45.0%	3,973	3,948
ARKANSAS OKLAHOMA GAS CORP.	33,349	33,349	na	na	na	3,006	3,477
ASSOCIATED NATURAL GAS CO.	17,208	17,208	79.4	na	na	3,623	4,000
ARKANSAS LOUISIANA GAS CO.	356,726	265,760	49.9	30.1	51.7%	2,745	3,152
LOUISIANA							
TRANS LOUISIANA	61,494	61,494	60.0	25.0	na	1,343	1,579
LOUISIANA GAS SERVICE CO.	216,687	216,687	30.4	27.4	na	1,326	na
ARKANSAS LOUISIANA GAS CO.	128,614	103,020	45.6	27.4	42.7%	1,973	2,269
ENTEX, INC.	119,637	114,560	30.0	27.0	80.0%	1,498	1,625
NEW ORLEANS PUBLIC SERVICE	153,669	152,132	na	na	na	1,111	1,319
OKLAHOMA							
ARKANSAS OKLAHOMA GAS CORP.	13,356	13,356	na	na	na	3,006	3,477
LONE STAR GAS CO.	32,450	28,900	55.0	25.0	58.0%	2,178	2,407
ARKANSAS LOUISIANA GAS CO.	105,853	81,824	46.2	27.8	56.4%	3,083	3,735
KPL GAS SERVICE	32,851	32,851	57.0	30.0	90.0%	4,610	5,319

APPENDIX 1 -- CUSTOMERS AND CONSUMPTION

DIVISION / STATE / COMPANY	RESIDENTIAL HOUSEHEATING CUSTOMERS YEAR-END 1986	CONSUMPTION PER SINGLE FAMILY HOME (MCF/YR) HEATING	BASELOAD	GAS-HTG MKT. SHARE VS. ALL FUELS	HEATING DEGREE DAYS 1986	30 YEAR NORMAL
OKLAHOMA NATURAL GAS CO.	587,953	586,888	72.0	31.0	87.0%	3,203	3,698
TEXAS							
ARKANSAS LOUISIANA GAS CO.	53,142	40,441	39.9	24.1	44.4%	2,364	2,269
LONE STAR GAS CO.	1,089,250	969,500	55.0	25.0	58.0%	2,178	2,407
SOUTHERN UNION GAS CO.	324,230	307,521	24.4	35.3	na	na	na
ENERGAS	253,446	243,308	54.0	33.0	80.0%	3,046	3,516
ENTEX, INC.	933,044	914,952	30.0	27.0	80.0%	1,685	1,510
CITY PUBLIC SERVICE	264,447	243,291	25.8	27.6	68.1%	1,332	1,606
MOUNTAIN							
ARIZONA							
SOUTHERN UNION GAS CO.	45,763	45,763	36.8	37.2	na	na	na
CITIZENS UTILITIES CO.	4,950	4,454	35.0	29.0	90.0%	1,766	2,720
SOUTHWEST GAS CORP.	470,921	397,667	28.2	27.2	70.0%	927	1,235
COLORADA							
K N ENERGY, INC.	5,261	5,156	67.0	28.0	na	6,116	6,801
PUBLIC SERVICE OF COLORADO	715,765	715,765	80.7	33.0	75.0%	5,288	6,014
CITY OF COLORADO SPRINGS	101,144	101,144	77.0	32.0	99.8%	5,779	6,373
IDAHO							
WASHINGTON WATER POWER	15,273	11,907	86.9	na	20.0%	6,858	6,905
INTERMOUNTAIN GAS CO.	91,671	91,671	65.0	23.0	47.0%	7,241	6,778
MONTANA							
MONTANA-DAKOTA UTILITIES CO.	54,889	54,340	70.8	30.2	91.5%	6,792	7,518
GREAT FALLS GAS CO.	20,417	20,417	72.9	31.6	97.0%	6,836	7,663
MONTANA POWER COMPANY	91,389	91,389	116.0	4.0	58.0%	7,696	8,279
NEW MEXICO							
GAS CO. OF NEW MEXICO	289,637	289,637	50.2	27.6	82.0%	4,031	4,414
NEVADA							
WESTPAC UTILITLIES	58,261	56,565	40.9	25.3	65.0%	4,985	6,022
SOUTHWEST GAS CORP.	150,377	125,741	42.9	32.4	42.0%	2,944	3,338
UTAH							
MOUNTAIN FUEL SUPPLY CO.	408,138	408,138	81.6	41.3	89.0%	5,522	5,881
WYOMING							
WYOMING GAS CO.	5,232	4,987	115.0	32.0	95.0%	5,718	7,694
MONTANA-DAKOTA UTILITIES CO.	10,768	10,660	74.0	31.8	91.7%	7,219	7,694
NORTHERN GAS DIVISION	38,689	38,689	88.0	29.0	90.0%	6,870	7,642
MOUNTAIN FUEL SUPPLY CO.	18,591	18,591	92.0	46.5	72.0%	8,207	8,352
K N ENERGY, INC.	9,116	8,934	66.0	28.0	na	7,126	7,594
PACIFIC							
CALIFORNIA							
SAN DIEGO GAS & ELECTRIC	568,300	538,234	16.0	24.0	70.0%	488	1,052
PACIFIC GAS AND ELECTRIC	2,967,474	2,908,125	44.0	22.5	79.0%	1,203	1,750
CITY OF LONG BEACH	120,231	116,281	34.0	67.0	96.0%	604	1,250
SOUTHERN CALIFORNIA GAS CO.	3,969,671	3,873,155	31.2	37.5	90.0%	1,035	1,535
SOUTHWEST GAS CORP.	58,765	52,301	42.6	26.6	84.0%	3,360	3,473
OREGON							
NORTHWEST NATURAL GAS CO.	242,789	222,447	49.6	24.1	26.0%	4,138	4,458
WASHINGTON							
WASHINGTON NATURAL GAS CO.	256,296	251,029	69.7	17.5	25.0%	4,539	4,912
NORTHWEST NATURAL GAS CO.	5,860	5,297	49.6	24.1	5.5%	4,138	4,458
WASHINGTON WATER POWER	54,856	53,378	86.9	na	33.0%	6,858	6,905
CASCADE NATURAL GAS CORP.	72,000	54,000	50.0	30.0	30.0%	5,608	5,600

APPENDIX 2

COMPETITIVE FUEL PRICES

The information in this section presents the average delivered price (as of December 31, 1986) of competitive fuels distributed to residential customers, gas' principal competition in each market, and the average annual gas heating bill. The data reflect prices in the principal city served within each company's franchise area. Regional fuel prices for competitive fuels are listed at the end of each division. Prices are expressed in dollars per million Btu for comparison.

The prices for natural gas represent househeating use only and exclude base load prices. Base load consumption includes all domestic uses of gas (e.g., ranges, water heaters, clothes dryers and air conditioning) except househeating. Moreover, base load prices are generally higher than househeating prices because utilities charge more per unit of energy for small monthly consumption (base load only) and less per unit of energy for large monthly consumption (base load pluse winter heating use).

The prices for electricity represent total electric use or the rate prevailing for 600 Kwh per month and above.

The following conversion factors were used to convert reported data to Btu.

Conversion Factors

Natural Gas	1,000 cubic feet/million Btu
Fuel Oil #2	7.194 gallons/million Btu
Electricity	293.083 kwh/million Btu
Propane	10.917 gallons/million Btu

Information marked "NA" represents data not available or fuel not distributed.

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE / COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31 NATURAL GAS	FUEL OIL NO. 2	ELECTRIC	PROPANE	COMPETITIVE FUEL	ANNUAL GAS HTG BILL
NEW ENGLAND							
CONNECTICUT							
SOUTHERN CONNECTICUT GAS CO.	BRIDGEPORT	$8.07	$4.84	$26.02	$12.75	#2 OIL	$739.00
NORTHEAST UTILITIES	HARTFORD	$8.50	$5.88	$26.16	NA	#2 OIL	$732.70
CONNECTICUT NATURAL GAS	WATERBURY	$6.82	$4.84	$20.68	$8.28	#2 OIL	$984.91
MASSACHUSETTS							
COMMONWEALTH GAS CO.	WORCESTER	$6.10	$5.88	$22.41	$3.27	#2 OIL	$619.93
BOSTON GAS CO.	BOSTON	$6.13	$5.50	$23.44	$9.80	#2 OIL	$700.84
BAY STATE GAS CO.	BROCKTON	$6.38	$5.04	$27.83	$10.69	#2 OIL	$555.00
COLONIAL GAS CO.	CAPE COD	$7.80	$5.68	$24.90	$11.98	ELECTRICITY	$555.00
ESSEX COUNTY GAS CO.	HAVERHILL	$6.15	$4.88	NA	$10.24	#2 OIL	$609.00
LOWELL GAS CO.	LOWELL	$7.25	$4.81	$20.51	$8.06	#2 OIL	$748.00
FALL RIVER GAS CO.	FALL RIVER	$4.66	$5.48	$23.44	NA	#2 OIL	$510.00
MAINE							
NORTHERN UTILITIES							
NEW HAMPSHIRE							
NORTHERN UTILITIES	PORTSMOUTH	$6.23	$4.87	$23.44	$10.35	#2 OIL	$645.00
RHODE ISLAND							
VALLEY GAS CO.	RHODE ISLAND	$6.59	$5.20	$26.84	$10.05	#2 OIL	$587.22
PROVIDENCE GAS CO.	PROVIDENCE	$6.41	$5.54	$21.94	$9.59	#2 OIL	$738.00
VERMONT							
VERMONT GAS SYSTEMS	BURLINGTON	$5.79	$5.68	$23.73	$10.02	ELECTRICITY	$556.00
NEW ENGLAND DIVISION		$6.17	$5.38	$23.96	$8.94		$686.36
MIDDLE ATLANTIC							
NEW JERSEY							
SOUTH JERSEY GAS CO.	ATLANTIC CITY	$6.56	$5.24	$19.92	$12.42	#2 OIL	$463.00
ELIZABETHTOWN GAS CO.	ELIZABETH	$7.00	$5.41	$35.16	$14.71	#2 OIL	$850.00
PUBLIC SERVICE ELECTRIC & GAS	NEWARK	$5.54	$5.68	$20.98	NA	#2 OIL	$720.00
NEW JERSEY NATURAL GAS CO.	ASBURY PARK	$6.72	$5.67	$32.82	$10.14	#2 OIL	$543.92
NEW YORK							
COLUMBIA GAS OF NEW YORK	BINGHAMTON	$5.54	$5.08	$26.96	$11.11	#2 OIL	$450.00
CENTRAL HUDSON GAS & ELECTRIC	POUGHKEEPSIE	$6.17	$5.01	$24.96	$10.78	#2 OIL	$397.10
CONSOLIDATED EDISON CO.	NEW YORK	$6.87	$5.50	$24.99	NA	#2 OIL	$660.00
NEW YORK STATE ELECTRIC & GAS	ITHACA	$5.60	$5.61	$23.44	$10.89	#2 OIL	$793.00
ROCHESTER GAS & ELECTRIC	ROCHESTER	$5.49	$4.40	$21.24	$9.90	ELECTRICITY	$511.00
NATIONAL FULL GAS DIST.	BUFFALO	$5.38	$5.28	$20.62	$10.78	#2 OIL	$529.92
ST. LAWRENCE GAS CO.	MASSENA	$4.41	$4.34	$14.06	$9.91	ELECTRICITY	$604.37
BROOKLYN UNION GAS CO.	NEW YORK	$7.55	$5.48	$25.49	NA	#2 OIL	$764.00
ORANGE & ROCKLAND UTILITIES	PEARL RIVER	$6.32	$3.47	$26.77	$6.33	#2 OIL	$649.14
PENNSYLVANIA							
PHILADELPHIA ELECTRIC CO.	PHILADELPHIA	$6.37	$3.61	$17.05	$10.46	ELECTRICITY	$794.00
COLUMBIA GAS OF PA	PITTSBURGH	$5.50	$4.68	$17.58	$9.48	ELECTRICITY	$390.00
NATIONAL FUEL GAS DIST.	ERIE	$4.25	$5.14	$22.27	$10.78	#2 OIL	$485.36
PENNSYLVANIA GAS & WATER	WILKES-BARRE	$5.92	$4.68	$25.37	$11.44	ELECTRICITY	$812.42
UGI CORPORATION	READING	$6.19	$4.76	$20.77	$10.89	#2 OIL	$552.00
PIKE COUNTY LIGHT & POWER	MILFORD	$5.69	$4.41	$26.25	$6.33	#2 OIL	$589.36
PHILADELPHIA GAS WORKS	PHILADELPHIA	$7.08	$5.21	$20.13	$16.45	#2 OIL	$771.00

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE / COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31 NATURAL GAS	FUEL OIL NO. 2	ELECTRIC	PROPANE	COMPETITIVE FUEL	ANNUAL GAS HTG BILL
PEOPLES NATURAL GAS CO.	PITTSBURGH	$5.73	$4.54	$19.63	$8.93	ELECTRICITY	$534.00
NORTH PENN GAS CO.	RURAL	$4.36	$4.58	$24.03	$10.46	#2 OIL	$322.85
EQUITABLE RESOURCES	PITTSBURGH	$6.30	$2.94	$23.44	$3.59		$711.90
MIDDLE ATLANTIC DIVISION		$6.05	$5.00	$22.31	$10.19		$636.07
EAST NORTH CENTRAL							
ILLINOIS							
UNITED CITIES GAS CO.	VANDALIA	$5.60	NA	$17.58	$9.80	ELECTRICITY	$440.00
IOWA-ILLINOIS GAS & ELECTRIC	ROCK ISLAND	$4.67	$4.94	$18.83	$5.88	PROPANE	$384.00
CENTRAL ILLINOIS LIGHT CO.	PEORIA	$4.60	$4.37	$12.42	$6.31	PROPANE	$596.00
NORTH SHORE GAS CO.	WAUKEGAN	$4.43	$5.92	$14.65	NA	ELECTRICITY	$657.00
PEOPLES GAS LIGHT & COKE	CHICAGO	$4.70	$6.00	$15.27	NA	ELECTRICITY	$526.00
CENTRAL ILLINOIS PUBLIC SERV.	QUINCY	$4.28	$4.47	$17.87	$6.43	ELECTRICITY	$480.00
NORTHERN ILLINOIS GAS CO.	ROCKFORD	$3.68	$5.57	$13.60	$7.21	ELECTRICITY	$504.00
ILLINOIS POWER CO.	DECATUR	$5.19	$3.32	$14.09	$5.45	ELECTRICITY	$482.11
INDIANA							
INDIANA GAS CO.	CLARKSVILLE	$5.76	$4.74	$15.79	$8.42	ELECTRICITY	$535.00
LAWRENCEBURG GAS CO.	LAWRENCEBURG	$5.33	$5.01	NA	$9.26	ELECTRICITY	$562.00
HOOSIER GAS CORP.	VINCENNES	$5.30	$4.21	$19.04	$8.38	ELECTRICITY	$468.43
NORTHERN INDIANA PUBLIC SERV.	FORT WAYNE	$4.67	$5.01	$16.11	$9.80	ELECTRICITY	$418.46
SOUTHERN INDIANA GAS & ELEC.	EVANSVILLE	$2.86	$3.67	$11.84	$6.75	#2 OIL	$430.70
OHIO VALLEY GAS CORP.	WINCHESTER	$4.40	$3.34	$20.51	$4.36	ELECTRICITY	$500.00
CITIZENS GAS & COKE	INDIANAPOLIS	$4.90	$5.34	$12.31	$6.54	ELECTRICITY	$490.00
MICHIGAN							
WISCONSIN PUBLIC SERVICE CO.	MENOMINEE	$5.09	$4.80	$19.19	$7.61	PROPANE	$482.89
NORTHERN STATES POWER CO.	BESSEMER	$5.23	$5.14	$14.65	$8.17	ELECTRICITY	$485.00
CONSUMERS POWER CO.	FLINT	$5.79	$5.34	$19.34	$8.82	#2 OIL	$523.00
MICHIGAN POWER CO.	HOLLAND	$4.89	$4.68	$15.24	$8.71	#2 OIL	$431.16
MICHIGAN GAS UTILITIES CO.	MONROE	$5.33	$5.27	$26.28	$6.64	#2 OIL	$428.53
MICHIGAN CONSOLIDATED GAS	DETROIT	$5.01	$5.62	$26.37	$9.00	#2 OIL	$567.00
OHIO							
DAYTON POWER & LIGHT	DAYTON	$4.82	$5.08	$14.83	$8.50	#2 OIL	$376.00
OHIO GAS CO.	BRYAN	$5.79	$5.68	$20.51	$7.84	ELECTRICITY	$575.00
NATIONAL FUEL GAS DIST.	ANDOVER	$4.45	$5.14	$22.27	$10.78	#2 OIL	$507.81
COLUMBIA GAS OF OHIO	COLUMBUS	$5.25	$5.61	$21.97	$9.80	ELECTRICITY	$370.00
EAST OHIO GAS CO.	CLEVELAND	$5.18	$5.30	$17.87	$10.24	ELECTRICITY	$664.00
WEST OHIO GAS CO.	LIMA	$5.43	$4.88	$19.04	$10.68	ELECTRICITY	$514.84
NATIONAL GAS & OIL CORP.	NEWARK	$4.77	NA	NA	NA	PROPANE	$349.00
CINCINNATI GAS & ELECTRIC	CINCINNATI	$4.95	$5.01	$14.49	$9.26	ELECTRCITY	$508.00
WISCONSIN							
NORTHERN STATES POWER CO.	EAU CLAIRE	$4.67	$5.01	$17.23	$7.63	ELECTRICITY	$426.00
WISCONSIN NATURAL GAS CO.	RACINE	$5.59	$4.82	$19.02	$7.69	#2 OIL	$617.83
WISCONSIN PUBLIC SERVICE	GREEN BAY	$5.09	$4.80	$19.19	$7.61	PROPANE	$482.89
MADISON GAS & ELECTRIC	MADISON	$5.34	$4.68	$18.40	$7.52	#2 OIL	$528.00
WISCONSIN GAS CO.	MILWAUKEE	$5.68	$5.34	$19.72	$8.49	#2 OIL	$604.00
WISCONSIN FUEL & LIGHT CO.	WAUSAU	$5.18	$4.74	$17.37	$8.71	#2 OIL	$532.89
WISCONSIN SOUTHERN GAS CO.	LAKE GENEVA	$5.30	$5.34	$19.63	$8.71	ELECTRICITY	$463.00

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE / COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31 NATURAL GAS	FUEL OIL NO. 2	ELECTRIC	PROPANE	COMPETITIVE FUEL	ANNUAL GAS HTG BILL
EAST NORTH CENTRAL DIVISION		$4.97	$5.27	$18.05	$8.05		$556.66
WEST NORTH CENTRAL							
IOWA							
MIDWEST GAS COMPANY	DES MOINES	$3.86	NA	$23.94	NA		$400.00
IOWA ELECTRIC LIGHT & POWER	MUSCATINE	$3.28	$4.68	$16.29	$5.33	#2 OIL	$395.00
IOWA-ILLINOIS GAS & ELECTRIC	DAVENPORT	$4.63	$4.94	$17.87	$5.88	PROPANE	$359.00
IOWA PUBLIC SERVICE CO.	SIOUX CITY	$5.19	$3.61	$20.07	$4.07	PROPANE	$559.82
CEDAR FALLS UTILITIES	CEDAR FALLS	$4.84	$6.01	$15.91	$6.75	PROPANE	$380.00
KANSAS							
ARKANSAS LOUISIANA GAS CO.	WICHITA	$3.08	NA	$26.66	$5.34	ELECTRICITY	$208.00
KPL GAS SERVICE	TOPEKA	$3.55	NA	$23.44	$4.90	ELECTRICITY	$249.00
K N ENERGY, INC.	COLBY	$3.55	NA	$18.11	$5.12	ELECTRICITY	$241.00
MIDWEST ENERGY, INC.	HAYS	$3.41	NA	$17.43	$6.10		$359.14
MINNESOTA							
AUSTIN UTILITIES	AUSTIN	$4.38	$4.74	$19.04	$5.88	PROPANE	$500.00
CITY OF DULUTH	DULUTH	$4.88	$5.34	$16.99	$9.26	#2 OIL	$610.00
MINNEGASCO, INC.	MINNEAPOLIS	$4.35	$5.21	$15.82	$7.41	ELECTRICITY	$483.00
IOWA PUBLIC SERVICE CO.	COON RAPIDS	$4.19	$5.01	$19.92	$8.50	ELECTRICITY	$359.00
NORTHERN STATES POWER CO.	ST. PAUL	$4.50	$5.54	$14.68	$6.58	ELECTRICITY	$567.00
ILLINOIS							
KPL GAS SERVICE	KANSAS CITY	$3.28	NA	$23.44	$4.90	ELECTRICITY	$269.00
CITY OF SPRINGFIELD	SPRINGFIELD	$4.01	$4.27	$15.03	$5.44	ELECTRICITY	$265.00
LACLEDE GAS CO.	LACLEDE	$3.92	$5.34	$12.31	$7.63	ELECTRICITY	$378.17
ASSOCIATED NATURAL GAS CO.	SIKESTON	$4.00	$3.81	$23.44	$6.43	#2 OIL	$456.00
NEBRASKA							
NORTHWESTERN PUBLIC SERVICE	GRAND ISLAND	$4.07	$3.67	$8.20	$4.90	ELECTRICITY	$526.00
KPL GAS SERVICE	FALLS CITY	$3.26	NA	$20.51	$4.90	ELECTRICITY	$267.00
K N ENERGY, INC.	SCOTTSBLUFF	$4.16	NA	$21.56	$5.12	ELECTRICITY	$304.00
MINNEGASCO, INC.	LINCOLN	$4.70	$5.34	$13.77	$7.63	ELECTRICITY	$361.00
METROPOLITAN UTILITIES DIST.	OMAHA	$3.55	$5.01	$10.25	$5.45	ELECTRICITY	$316.00
HASTINGS UTILITIES	HASTINGS	$4.13	NA	$20.51	NA		$489.12
IOWA PUBLIC SERVICE CO.	SIOUX CITY	$5.03	$3.61	NA	$4.07	PROPANE	$497.92
NORTH DAKOTA							
MONTANA-DAKOTA UTILITIES CO.	BISMARCK	$4.78	$3.81	$16.55	$6.75	ELECTRICITY	$418.00
NORTHERN STATES POWER CO.	FARGO	$3.97	$5.54	$11.16	$6.58	ELECTRICITY	$476.00
IOWA PUBLIC SERVICE CO.	YANKTON	$5.18	$3.61	$15.53	$4.07	PROPANE	$532.80
MINNEGASCO, INC.	SIOUX FALLS	$4.45	$5.28	$15.82	$7.41	ELECTRICITY	$446.00
NORTHWESTERN PUBLIC SERVICE	ABERDEEN	$4.10	$3.93	$8.79	$4.90	ELECTRICITY	$443.00
MONTANA-DAKOTA UTILITIES CO.	RAPID CITY	$4.80	$4.08	$12.09	$7.08	ELECTRICITY	$304.00
WEST NORTH CENTRAL DIVISION		$4.02	$4.92	$17.86	$6.07		$380.10
SOUTH ATLANTIC							
DELAWARE							
DELMARVA POWER & LIGHT CO.	WILMINGTON	$5.74	$6.01	$17.58	NA	#2 OIL	na
DIST. OF COL.							

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE / COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31 NATURAL GAS	FUEL OIL NO. 2	ELECTRIC	PROPANE	COMPETITIVE FUEL	ANNUAL GAS HTG BILL
WASHINGTON GAS LIGHT CO.	WASHINGTON	$7.47	$5.60	$16.82	$13.81	ELECTRICITY	$729.80
FLORIDA							
PEOPLES GAS SYSTEM, INC.	MIAMI	$4.83	$6.41	$23.15	$10.35	ELECTRICITY	$90.00
GEORGIA							
UNITED CITIES GAS CO.	COLUMBUS	$6.03	NA	$18.84	$9.26	ELECTRICITY	$282.40
ATLANTA GAS LIGHT COMPANY	ATLANTA	$6.45	$4.54	$19.04	$9.26	ELECTRICITY	$315.00
MARYLAND							
COLUMBIA GAS OF MD	CUMBERLAND	$5.96	$5.54	$17.29	$11.76	ELECTRICITY	$420.00
BALTIMORE GAS & ELECTRIC	BALTIMORE	$6.38	$5.18	$19.78	$8.17	ELECTRICITY	na
WASHINGTON GAS LIGHT CO.	HYATTSVILLE	$5.73	$5.60	$14.12	$13.81	ELECTRCITIY	$543.00
NORTH CAROLINA							
NORTH CAROLINA NATURAL GAS	FAYETTEVILLE	$5.40	$5.68	$20.51	$8.71	ELECTICITY	$368.00
PIEDMONT NATURAL GAS CO.	CHARLOTTE	$5.80	$6.01	$19.04	$11.22	ELECTRICITY	$428.00
CITY OF WILSON	WILSON	$6.50	$4.74	$18.77	$8.77	#2 OIL	$449.84
PUBLIC SERVICE OF N.C.	RALEIGH	$5.73	$4.79	$22.71	$9.06	ELECTRICITY	$452.83
SOUTH CAROLINA							
UNITED CITIES GAS CO.	GAFFNEY	$5.60	NA	$16.11	$9.80	ELECTRICITY	$265.00
SOUTH CAROLINA ELECTRIC & GAS	COLUMBIA	$6.10	$5.34	$18.31	$9.80	#2 OIL	$343.83
PIEDMONT NATURAL GAS CO.	GREENVILLE	$6.20	$6.01	$19.31	$11.22	ELECTRICITY	$428.00
PEOPLES GAS CO. OF S.C.	SUMPTER	$7.98	NA	NA	NA		$327.00
CITY OF GREENWOOD	GREENWOOD	$5.00	$5.34	$15.58	$10.22	ELECTRICITY	$269.00
VIRGINIA							
COLUMBIA GAS OF VA	STAUNTON	$6.02	$5.14	$14.94	$9.26	ELECTRICITY	$385.00
CITY OF RICHMOND	RICHMOND	$5.60	$4.48	$19.04	$9.37	ELECTRICITY	$453.00
UNITED CITIES GAS CO.	BRISTOL	$4.83	$5.81	$14.94	$9.80	ELECTRICITY	$396.30
WASHINGTON GAS LIGHT CO.	ALEXANDRIA	$6.32	$5.60	$14.74	$13.81	ELECTRICITY	$480.00
VIRGINIA NATURAL GAS	TIDEWATER	$4.74	$4.81	$14.73	$10.57	ELECTRICITY	$480.00
CITY OF CHARLOTTESVILLE	CHARLOTTESVILLE	$6.23	$6.01	$16.70	$10.13	ELECTRICITY	$685.00
CITY OF DANVILLE	DANVILLE	$5.22	$5.74	$14.62	$8.33	ELECTRICITY	$342.60
ROANOKE GAS CO.	ROANOKE	$4.80	$0.55	$196.31	$7.57	ELECTRICITY	$483.00
WEST VIRGINIA							
HOPE GAS CO.	PARKERSBURG	$6.02	$4.02	$17.00	$5.27	ELECTRICITY	$475.00
MOUNTAINEER GAS CO.	CHARLESTON	$5.66	$3.67	$18.17	$9.26	ELECTRICITY	$453.00
SOUTH ATLANTIC DIVISION		$6.09	$5.12	$18.44	$10.00		$393.26
EAST SOUTH CENTRAL							
ALABAMA							
CITY OF HUNTSVILLE	HUNTSVILLE	$4.36	$5.57	$13.07	$9.59	#2 OIL	$263.00
ALABAMA GAS CORP.	BIRMINGHAM	$5.75	NA	$16.55	$7.08	ELECTRICITY	$503.28
CITY OF FLORENCE	FLORENCE	$5.59	$4.08	$15.53	$8.28	ELECTRICITY	na
SOUTHEAST ALABAMA GAS	ANDALUSIA	$5.90	$4.21	$26.37	$7.63	ELECTRICITY	$350.00
DECATUR UTILITIES	DECATUR	$3.81	$4.68	$14.36	$7.84	ELECTRICITY	$195.00
KENTUCKY							
LOUISVILLE GAS & ELECTRIC	LOUISVILLE	$3.83	$4.00	$13.82	$8.93	ELECTRICITY	$253.00
WESTERN KENTUCKY GAS CO.	OWENSBORO	$3.60	$4.34	$16.11	$9.26	ELECTRICITY	$260.00
UNION LIGHT, HEAT & POWER	COVINGTON	$5.27	$5.01	$13.29	$9.26	ELECTRICITY	$564.00
DELTA NATURAL GAS CO.	WINCHESTER	$5.29	$5.68	$16.11	$9.26	ELECTRICITY	$375.00
COLUMBIA GAS OF KY	LEXINGTON	$5.50	$4.01	$14.65	$9.04	ELECTRICITY	$380.00

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE / COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31 NATURAL GAS	FUEL OIL NO. 2	ELECTRIC	PROPANE	COMPETITIVE FUEL	ANNUAL GAS HTG BILL
MISSISSIPPI							
ENTEX, INC.	GULFPORT	$5.32	NA	$23.73	$8.50	ELECTRICITY	$208.28
MISSISSIPPI VALLEY GAS CO.	JACKSON	$5.60	NA	$17.87	$8.71	ELECTRICITY	$395.31
TENNESSEE							
NASHVILLE GAS CO.	NASHVILLE	$4.29	$4.94	$15.70	$9.04	ELECTRICITY	$365.00
UNITED CITIES GAS CO.	COLUMBIA	$5.37	$5.81	$15.00	$9.80	ELECTRICITY	$356.00
MIDDLE TENNESSEE NATURAL GAS	SMITHVILLE	$5.80	$4.00	$15.53	$9.36	ELECTRICITY	$307.40
MEMPHIS LIGHT, GAS & WATER	MEMPHIS	$3.90	$4.41	$15.61	$7.63	PROPANE	$395.00
EAST SOUTH CENTRAL DIVISION		$4.88	$4.45	$16.42	$8.33		$385.02
WEST SOUTH CENTRAL							
ARKANSAS							
ARKANSAS OKLAHOMA GAS CORP.	FORT SMITH	$3.62	NA	$19.04	$7.41	ELECTRICITY	$360.00
ASSOCIATED NATURAL GAS CO.	BLYTHEVILLE	$4.00	$3.81	$23.44	$6.43	#2 OIL	$389.00
ARKANSAS LOUISIANA GAS CO.	LITTLE ROCK	$4.90	NA	$20.51	$7.41	ELECTRICITY	$239.50
ARKANSAS WESTERN GAS CO.	FAYETTEVILLE	$3.92	NA	$20.33	$8.17	ELECTRICITY	$195.95
LOUISIANA							
TRANS LOUISIANA	LAFAYETTE	NA	NA	NA	NA		$203.01
ENTEX, INC.	LAKE CHARLES	$5.59	NA	$24.61	$8.61	ELECTRICITY	$190.20
NEW ORLEANS PUBLIC SERVICE	NEW ORLEANS	$5.62	NA	$17.87	NA	#2 OIL	na
LOUISIANA GAS SERVICE CO.	HARVEY	$6.83	NA	$19.46	NA		$174.00
ARKANSAS LOUISIANA GAS CO.	SHREVEPORT	$4.83	NA	$19.92	$9.37	ELECTRICITY	$230.00
OKLAHOMA							
OKLAHOMA NATURAL GAS CO.	OKLAHOMA CITY	$4.05	NA	$15.24	$8.17	ELECTRICITY	$293.13
KPL GAS SERVICE	BARTLESVILLE	$3.40	NA	$17.58	$4.90	ELECTRICITY	$279.00
ARKANSAS OKLAHOMA GAS CORP.	POTEAU	$5.02	NA	$20.51	$7.41	ELECTRICITY	$441.76
LONE STAR GAS CO.	DURANT	$5.01	NA	$11.24	$8.71	ELECTRICITY	$275.00
ARKANSAS LOUISIANA GAS CO.	LAWTON	$5.02	NA	$20.80	$5.56	ELECTRICITY	$247.00
TEXAS							
ENTEX, INC.	HOUSTON	$4.41	NA	$25.20	$8.50	ELECTRICITY	$172.50
CITY PUBLIC SERVICE	SAN ANTONIO	$5.33	NA	$17.02	$7.84	ELECTRICITY	$143.41
ARKANSAS LOUISIANA GAS CO.	TEXARKANA	$4.34	$4.34	$14.65	$7.95	ELECTRICITY	$200.00
LONE STAR GAS CO.	DALLAS	$5.29	NA	$18.43	$8.71	ELECTRICITY	$291.00
SOUTHERN UNION GAS CO.	AUSTIN	$4.95	$3.61	$24.90	$7.63	ELECTRICITY	$153.00
ENERGAS	LUBBOCK/AMARILLO	$3.95	NA	$21.39	$7.84	ELECTRICITY	$233.61
WEST SOUTH CENTRAL DIVISION		$4.84	$3.70	$20.30	$8.52		$229.13
MOUNTAIN							
ARIZONA							
CITIZENS UTILITIES CO.	NOGALES	$5.48	NA	$33.49	$10.85	PROPANE	$192.00
SOUTHWEST GAS CORP.	TUCSON	$4.51	$3.97	$16.20	$10.12	ELECTRICITY	$181.50
SOUTHERN UNION GAS CO.	FLAGSTAFF	$4.45	$3.61	$26.96	$8.93	ELECTRICITY	$134.00
COLORADO							
K N ENERGY, INC.	YUMA	$5.17	NA	$21.97	$5.12	ELECTRICITY	$346.00
CITY OF COLORADO SPRINGS	COLORADO SPRINGS	$4.47	NA	$13.18	NA	ELECTRICITY	$344.00

APPENDIX 2 -- COMPETITIVE FUEL PRICES

DIVISION / STATE / COMPANY	PRINCIPAL CITY SERVED	AS OF DECEMBER 31 NATURAL GAS	FUEL OIL NO. 2	ELECTRIC	PROPANE	COMPETITIVE FUEL	ANNUAL GAS HTG BILL
PUBLIC SERVICE OF COLORADO	DENVER	$4.77	$3.47	$24.78	$8.50	ELECTRICITY	$339.52
IDAHO							
WASHINGTON WATER POWER	SPOKANE	$4.03	$5.08	$15.53	$8.61	WOOD	$371.00
INTERMOUNTAIN GAS CO.	BOISE	$6.03	$4.08	$12.36	$10.78	ELECTRICITY	$380.00
MONTANA							
MONTANA POWER COMPANY	MISSOULA	$3.36	$4.12	$14.44	$7.52	#2 OIL	$394.00
MONTANA-DAKOTA UTILITIES CO.	BILLINGS	$4.81	$3.61	$15.53	$5.99	ELECTRICITY	$341.00
GREAT FALLS GAS CO.	GREAT FALLS	$4.02	$4.01	$14.36	$7.84	ELECTRICITY	$339.00
NEVADA							
WESTPAC UTILITLIES	RENO	$5.10	$7.68	$24.32	$12.53	#2 OIL	$243.81
SOUTHWEST GAS CORP.	LAS VEGAS	$4.19	$3.92	$18.02	$11.14	ELECTRICITY	$263.00
NEW MEXICO							
GAS CO. OF NEW MEXICO	ALBUQUERQUE	$4.89	NA	$25.64	$7.16	ELECTRICITY	$329.99
UTAH							
MOUNTAIN FUEL SUPPLY CO.	SALT LAKE CITY	$3.50	$3.25	$24.61	$6.93	#2 OIL	$365.00
WYOMING							
MOUNTAIN FUEL SUPPLY CO.	ROCK SPRINGS	$3.50	$3.25	$24.61	$6.93	#2 OIL	$376.00
WYOMING GAS CO.	WORLAND	$4.80	$5.95	$14.30	$7.52	ELECTRICITY	$600.00
NORTHERN GAS DIVISION	CASPER	$4.46	NA	$13.43	$8.93	ELECTRICITY	$387.00
MONTANA-DAKOTA UTILITIES CO.	SHERIDAN	$4.35	NA	$15.85	$5.23	ELECTRICITY	$321.00
K N ENERGY, INC.	DOUGLAS	$4.32	NA	$13.43	$5.12	ELECTRICITY	$285.00
MOUNTAIN DIVISION		$4.46	$3.75	$21.28	$8.53		$312.52
PACIFIC							
CALIFORNIA							
SOUTHERN CALIFORNIA GAS CO.	LOS ANGELES	$5.12	$6.21	$23.15	$8.51	ELECTRICITY	$159.74
SOUTHWEST GAS CORP.	VICTORVILLE	$6.14	$4.14	$20.19	$10.35	PROPANE	$275.00
SAN DIEGO GAS & ELECTRIC	SAN DIEGO	$3.86	NA	$28.71	$11.11	ELECTRICITY	$77.40
CITY OF LONG BEACH	LONG BEACH	$3.80	NA	NA	NA	ELECTRICITY	$112.56
PACIFIC GAS AND ELECTRIC	SAN FRANCISCO	$4.78	$7.82	$23.18	$13.83	ELECTRICITY	$207.00
OREGON							
NORTHWEST NATURAL GAS CO.	PORTLAND	$6.03	$4.15	$14.36	$10.89	ELECTRICITY	$324.00
WASHINGTON							
NORTHWEST NATURAL GAS CO.	VANCOUVER	$5.45	$4.46	$10.84	$10.89	ELECTRICITY	$300.00
WASHINGTON WATER POWER	SPOKANE	$3.93	$5.08	$14.59	$8.61	WOOD	$353.00
CASCADE NATURAL GAS CO.	SEATTLE	$5.74	$5.01	$11.72	$9.80	ELECTRICITY	$300.00
WASHINGTON NATURAL GAS CO.	SEATTLE	$5.95	$4.86	$12.96	NA	ELECTRICITY	$414.00
PACIFIC DIVISION		$4.95	$6.70	$22.80	$10.80		$186.09

APPENDIX 3

HOUSEHEATING UNIT ADDITIONS- 1986 ACTUAL AND 1987 ANTICIPATED

Column 1 summarizes househeating unit additions from new construction. Column 2 summarizes total conversions from other heating fuels. Column 3 summarizes unit losses and column 4 presents the net unit additions.

DIVISION / STATE / COMPANY	ADDITIONS FROM NEW CONSTRUCTION 1986	ADDITIONS FROM NEW CONSTRUCTION 1987	TOTAL CONVERSIONS TO GAS 1986	TOTAL CONVERSIONS TO GAS 1987	LESS TOTAL LOSSES 1986	LESS TOTAL LOSSES 1987	NET ADDITIONS 1986	NET ADDITIONS 1987
NEW ENGLAND								
CONNECTICUT								
SOUTHERN CONNECTICUT GAS CO.	2,085	1,670	1,650	1,320	NA	NA	NA	NA
NORTHEAST UTILITIES	1,454	3,300	1,240	1,400	NA	NA	NA	NA
CONNECTICUT NATURAL GAS	1,663	1,800	1,643	1,030	120	120	3,186	2,710
MASSACHUSETTS								
LOWELL GAS CO.	1,986	2,200	217	122	NA	NA	NA	NA
BAY STATE GAS CO.	2,750	3,500	3,150	3,500	124	NA	5,776	NA
FALL RIVER GAS CO.	NA	NA	505	560	10	10	NA	NA
COMMONWEALTH GAS CO.	2,096	1,700	1,720	1,600	7	1	3,809	3,299
BOSTON GAS CO.	1,321	500	6,739	7,100	NA	NA	NA	NA
COLONIAL GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
ESSEX COUNTY GAS CO.	850	1,000	150	1,225	54	50	946	2,175
MAINE								
NORTHERN UTILITIES	125	175	50	50	100	NA	75	NA
NEW HAMPSHIRE								
NORTHERN UTILITIES	600	600	200	200	35	NA	765	NA
RHODE ISLAND								
VALLEY GAS CO.	318	1,300	673	542	60	62	931	1,780
PROVIDENCE GAS CO.	2,378	2,500	991	1,150	60	60	3,309	3,590
VERMONT								
VERMONT GAS SYSTEMS	671	600	630	650	NA	NA	NA	NA
MIDDLE ATLANTIC								
NEW JERSEY								
NEW JERSEY NATURAL GAS COMPANY	14,262	14,935	989	911	0	0	15,251	15,846
PUBLIC SERVICE ELECTRIC & GAS	20,191	17,000	14,442	15,000	NA	NA	NA	NA
SOUTH JERSEY GAS CO.	7,446	7,710	1,610	1,667	NA	NA	NA	NA
ELIZABETHTOWN GAS CO.	5,000	127,480	1,800	2,100	NA	NA	NA	NA
NEW YORK								
NATIONAL FUEL GAS DIST.	2,405	2,314	826	794	436	419	2,795	2,689
BROOKLYN UNION GAS CO.	3,300	3,300	3,100	3,100	1,200	1,200	5,200	5,200
ORANGE & ROCKLAND UTILITIES	1,855	1,680	0	0	0	0	1,855	1,680
COLUMBIA GAS OF NEW YORK	504	570	161	300	140	145	525	725
CENTRAL HUDSON GAS & ELECTRIC	939	600	768	600	NA	NA	NA	NA
ST. LAWRENCE GAS CO.	16	10	215	182	8	6	223	186
NEW YORK STATE ELECTRIC & GAS	NA	NA	NA	NA	NA	NA	NA	NA
ROCHESTER GAS & ELECTRIC	3,211	3,481	2,092	2,024	111	186	5,192	5,319
CONSOLIDATED EDISON CO.	911	500	1,862	4,000	NA	NA	NA	NA
LONG ISLAND LIGHTING CO.							0	0
PENNSYLVANIA								
PENNSYLVANIA GAS & WATER	400	500	2,044	2,500	2	NA	2,442	NA
PIKE COUNTY LIGHT & POWER	21	9	0	0	0	0	21	9
NORTH PENN GAS CO.	225	300	124	100	NA	NA	NA	NA
PEOPLES NATURAL GAS CO.	2,033	2,130	467	410	781	781	1,719	1,759
PHILADELPHIA GAS WORKS	2,488	2,700	2,457	2,520	1,000	1,000	3,945	4,220
EQUITABLE RESOURCES	NA	NA	102	200	NA	NA	NA	NA
UGI CORPORATION	1,072	1,470	2,057	2,105	399	360	2,730	3,215
COLUMBIA GAS OF PA	2,129	1,845	1,750	1,750	1,520	1,550	2,359	2,045
PHILADELPHIA ELECTRIC CO.	3,556	2,900	3,021	2,000	NA	NA	NA	NA
NATIONAL FUEL GAS DIST.	675	649	975	938	172	172	1,478	1,415
EAST NORTH CENTRAL								
ILLINOIS								

APPENDIX 3 -- ADDITIONS FROM NEW CONSTRUCTION AND CONVERSIONS

DIVISION	STATE	COMPANY	ADDITIONS FROM NEW CONSTRUCTION 1986	ADDITIONS FROM NEW CONSTRUCTION 1987	TOTAL CONVERSIONS TO GAS 1986	TOTAL CONVERSIONS TO GAS 1987	LESS TOTAL LOSSES 1986	LESS TOTAL LOSSES 1987	NET ADDITIONS 1986	NET ADDITIONS 1987
		IOWA-ILLINOIS GAS & ELECTRIC	86	NA	29	NA	508	NA	(393)	NA
		UNITED CITIES GAS CO.	25	NA	100	NA	NA	NA	NA	NA
		PEOPLES GAS LIGHT & COKE	2,400	2,100	1,900	1,080	4,300	3,200	0	(20)
		ILLINOIS POWER CO.	NA	NA	NA	NA	NA	NA	NA	NA
		NORTH SHORE GAS CO.	2,220	2,500	600	570	160	160	2,660	2,910
		NORTHERN ILLINOIS GAS CO.	33,975	30,000	2,965	3,000	5,000	5,000	31,940	28,000
		CENTRAL ILLINOIS LIGHT CO.	225	250	1,181	1,260	275	250	1,131	1,260
		CENTRAL ILLINOIS PUBLIC SERV.	NA	NA	NA	NA	NA	NA	NA	NA
		WISCONSIN POWER & LIGHT CO.	NA	NA	NA	NA	NA	NA	NA	NA
	INDIANA									
		LAWRENCEBURG GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
		SOUTHERN INDIANA GAS & ELECTRIC	NA	NA	NA	NA	NA	NA	NA	NA
		OHIO VALLEY GAS CORP.	92	70	103	67	19	17	176	120
		HOOSIER GAS CORP.	144	144	58	54	87	87	115	111
		INDIANA GAS CO.	3,535	3,700	3,300	3,415	825	825	6,010	6,290
		NORTHERN INDIANA PUBLIC SERVICE	8,178	7,000	2,300	1,600	622	800	9,856	7,800
		CITIZENS GAS & COKE	NA	NA	NA	NA	NA	NA	NA	NA
	MICHIGAN									
		WISCONSIN PUBLIC SERVICE	NA	NA	NA	NA	NA	NA	NA	NA
		NORTHERN STATES POWER CO.	4	NA	33	NA	NA	NA	NA	NA
		CONSUMERS POWER CO.	18,598	20,000	660	575	325	325	18,933	20,250
		MICHIGAN CONSOLIDATED GAS	9,130	9,050	1,992	2,320	NA	NA	NA	NA
		MICHIGAN GAS UTILITIES CO.	1,016	NA	1,023	1,185	NA	NA	NA	NA
		MICHIGAN POWER CO.	1,124	1,033	733	673	30	28	1,827	1,678
	OHIO									
		EAST OHIO GAS CO.	6,667	6,800	2,044	2,000	NA	NA	NA	NA
		WEST OHIO GAS CO.	418	150	159	140	0	90	577	200
		NATIONAL FUEL GAS DIST.	20	NA	28	NA	4	NA	44	NA
		COLUMBIA GAS OF OHIO	13,358	14,000	3,881	4,500	3,750	3,700	13,489	14,800
		DAYTON POWER & LIGHT	NA	NA	1,768	NA	NA	NA	NA	NA
		OHIO GAS CO.	189	200	282	240	32	NA	439	NA
		CINCINNATI GAS & ELECTRIC	NA	NA	NA	NA	NA	NA	NA	NA
		NATIONAL GAS & OIL CORP.	350	300	NA	NA	NA	NA	NA	NA
	WISCONSIN									
		WISCONSIN GAS CO.	1,940	1,367	5,529	4,073	339	NA	7,130	NA
		WISCONSIN SOUTHERN GAS CO.	275	270	380	310	20	20	635	560
		MADISON GAS & ELECTRIC	1,228	1,281	1,186	814	NA	NA	NA	NA
		NORTHERN STATES POWER CO.	496	NA	1,081	NA	59	NA	1,518	NA
		WISCONSIN NATURAL GAS CO.	3,320	3,300	2,650	2,640	NA	NA	NA	NA
		WISCONSIN PUBLIC SERVICE	NA	NA	NA	NA	NA	NA	NA	NA
		WISCONSIN FUEL & LIGHT CO.	296	300	314	300	0	0	610	600
		WISCONSIN POWER & LIGHT CO.	NA	NA	NA	NA	NA	NA	NA	NA
WEST NORTH CENTRAL										
	IOWA									
		IOWA PUBLIC SERVICE CO.	NA	NA	NA	NA	NA	NA	NA	NA
		IOWA-ILLINOIS GAS & ELECTRIC	941	500	166	NA	523	NA	584	NA
		IOWA ELECTRIC LIGHT & POWER	NA	NA	NA	NA	NA	NA	NA	NA
		MIDWEST GAS COMPANY	1,180	1,100	720	810	200	200	1,700	1,710
		CEDAR FALLS UTILITIES	14	15	80	38	0	0	94	53
	KANSAS									
		ARKANSAS LOUISIANA GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
		K N ENERGY, INC.	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX 3 -- ADDITIONS FROM NEW CONSTRUCTION AND CONVERSIONS

(DIVISION) STATE	COMPANY	ADDITIONS FROM NEW CONSTRUCTION 1986	ADDITIONS FROM NEW CONSTRUCTION 1987	TOTAL CONVERSIONS TO GAS 1986	TOTAL CONVERSIONS TO GAS 1987	LESS TOTAL LOSSES 1986	LESS TOTAL LOSSES 1987	NET ADDITIONS 1986	NET ADDITIONS 1987
	KPL GAS SERVICE	6,357	7,000	350	350	NA	NA	NA	NA
	MIDWEST ENERGY, INC.	NA	20	NA	NA	89	NA	NA	NA
MINNESOTA									
	CITY OF DULUTH	32	50	230	345	312	0	(50)	395
	MINNEGASCO, INC.	18,497	16,636	773	650	315	330	18,955	16,956
	NORTHERN STATES POWER CO.	3,439	3,500	1,259	1,500	25	25	4,673	4,975
	IOWA PUBLIC SERVICE CO.	NA	NA	NA	NA	NA	NA	NA	NA
	AUSTIN UTILITIES	12	15	0	NA	2	NA	10	NA
MISSOURI									
	KPL GAS SERVICE	9,250	11,000	350	450	NA	NA	NA	NA
	LACLEDE GAS CO.	7,700	,900	NA	NA	1,400	NA	NA	NA
	ASSOCIATED NATURAL GAS CO.	NA	300	NA	NA	0	0	NA	NA
	CITY OF SPRINGFIELD	1,263	NA	NA	NA	2	NA	NA	NA
NEBRASKA									
	MINNEGASCO, INC.	880	849	85	80	360	360	605	569
	HASTINGS UTILITIES	23	20	0	0	14	10	9	10
	K N ENERGY, INC.	NA	NA	NA	NA	NA	NA	NA	NA
	METROPOLITAN UTILITIES DISTRICT	2,900	1,500	300	50	200	280	3,000	1,270
	KPL GAS SERVICE	50	50	10	10	0	57	60	3
	IOWA PUBLIC SERVICE CO.	NA	NA	NA	NA	NA	NA	NA	NA
	NORTHWESTERN PUBLIC SERVICE	50	50	0	0	0	0	50	50
NORTH DAKOTA									
	MONTANA-DAKOTA UTILITIES CO.	236	50	36	30	45	40	227	40
	NORTHERN STATES POWER CO.	437	450	449	500	50	50	836	900
SOUTH DAKOTA									
	MINNEGASCO, INC.	1,320	1,058	146	140	20	20	1,446	1,178
	NORTHWESTERN PUBLIC SERVICE	150	100	0	0	0	0	150	100
	IOWA PUBLIC SERVICE CO.	NA	NA	NA	NA	NA	NA	NA	NA
	MONTANA-DAKOTA UTILITIES CO.	708	300	14	12	50	50	672	262
SOUTH ATLANTIC									
DIST. OF COL.									
	WASHINGTON GAS LIGHT CO.	200	400	1,800	1,000	1,300	1,300	700	100
DELAWARE									
	DELMARVA POWER & LIGHT CO.	241	330	857	325	NA	NA	NA	NA
FLORIDA									
	PEOPLES GAS SYSTEM, INC.	914	800	1,568	2,150	925	1,010	1,557	1,940
GEORGIA									
	UNITED CITIES GAS CO.	558	600	31	50	NA	NA	NA	NA
	ATLANTA GAS LIGHT COMPANY	49,323	56,700	NA	NA	NA	NA	NA	NA
MARYLAND									
	COLUMBIA GAS OF MD	130	130	145	158	360	375	(85)	(87)
	BALTIMORE GAS & ELECTRIC	1,728	NA	2,500	2,500	300	NA	3,928	NA
	WASHINGTON GAS LIGHT CO.	2,800	4,000	2,100	1,700	900	900	4,000	4,800
NORTH CAROLINA									
	PUBLIC SERVICE OF NORTH CAROLIN	4,758	4,000	5,170	4,925	285	323	9,643	8,602
	CITY OF WILSON	71	67	23	25	NA	NA	NA	NA
	NORTH CAROLINA NATURAL GAS	NA	NA	NA	NA	NA	NA	NA	NA
	PIEDMONT NATURAL GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
SOUTH CAROLINA									
	PIEDMONT NATURAL GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
	CITY OF GREENWOOD	75	100	75	125	5	5	145	220
	UNITED CITIES GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX 3 -- ADDITIONS FROM NEW CONSTRUCTION AND CONVERSIONS

DIVISION / STATE / COMPANY	ADDITIONS FROM NEW CONSTRUCTION 1986	ADDITIONS FROM NEW CONSTRUCTION 1987	TOTAL CONVERSIONS TO GAS 1986	TOTAL CONVERSIONS TO GAS 1987	LESS TOTAL LOSSES 1986	LESS TOTAL LOSSES 1987	NET ADDITIONS 1986	NET ADDITIONS 1987
PEOPLES GAS CO. OF S.C.	NA	NA	NA	NA	NA	NA	NA	NA
SOUTH CAROLINA ELECTRIC & GAS	NA	NA	NA	NA	NA	NA	NA	NA
VIRGINIA								
CITY OF RICHMOND	237	300	NA	NA	NA	NA	NA	NA
UNITED CITIES GAS CO.	220	300	610	700	75	NA	755	NA
WASHINGTON GAS LIGHT CO.	4,400	6,000	900	1,200	700	700	4,600	6,500
ROANOKE GAS CO.	567	NA	273	NA	98	NA	742	NA
CITY OF DANVILLE	20	20	100	70	10	10	110	80
COLUMBIA GAS OF VA	941	1,150	223	239	190	190	974	1,199
VIRGINIA NATURAL GAS	4,554	NA	NA	895	NA	NA	NA	NA
CITY OF CHARLOTTESVILLE	143	200	34	85	2	5	175	280
WEST VIRGINIA								
HOPE GAS CO.	289	430	52	50	51	0	290	480
MOUNTAINEER GAS CO.	1,704	1,800	260	270	420	400	1,544	1,670
EAST SOUTH CENTRAL								
ALABAMA								
ALABAMA GAS CORP.	3,797	4,500	1,416	410	2,100	2,100	3,113	2,810
CITY OF FLORENCE	NA	NA	NA	NA	32	NA	NA	NA
DECATUR UTILITIES	30	75	12	19	10	10	32	84
CITY OF HUNTSVILLE	407	NA	259	277	180	165	486	NA
SOUTHEAST ALABAMA GAS	NA	NA	NA	NA	NA	NA	NA	NA
KENTUCKY								
LOUISVILLE GAS & ELECTRIC	NA	NA	NA	NA	0	NA	NA	NA
WESTERN KENTUCKY GAS CO.	1,200	1,500	1,223	1,000	97	NA	2,326	NA
UNION LIGHT, HEAT & POWER	NA	NA	NA	NA	NA	NA	NA	NA
COLUMBIA GAS OF KY	1,323	1,800	194	210	840	840	677	1,170
DELTA NATURAL GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
MISSISSIPPI								
MISSISSIPPI VALLEY GAS CO.	3,249	3,300	350	375	538	700	3,061	2,975
ENTEX, INC.	200	NA	290	260	40	40	450	NA
TENNESSEE								
MEMPHIS LIGHT, GAS & WATER	NA	NA	NA	NA	NA	NA	NA	NA
NASHVILLE GAS CO.	2,572	4,000	1,100	1,100	142	142	3,530	4,958
UNITED CITIES GAS CO.	1,512	200	700	800	75	NA	2,237	NA
MIDDLE TENNESSEE NATURAL GAS	700	600	510	380	40	40	1,170	940
WEST SOUTH CENTRAL								
ARKANSAS								
ARKANSAS LOUISIANA GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
ARKANSAS OKLAHOMA GAS CORP.	347	500	NA	NA	NA	NA	NA	NA
ARKANSAS WESTERN GAS CO.	1,250	NA	NA	NA	NA	NA	NA	NA
ASSOCIATED NATURAL GAS CO.	NA	400	NA	NA	0	0	NA	NA
LOUISIANA								
TRANS LOUISIANA	NA	NA	NA	NA	NA	NA	NA	NA
ARKANSAS LOUISIANA GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
ENTEX, INC.	300	700	200	180	50	50	450	830
LOUISIANA GAS SERVICE CO.	NA	NA	NA	NA	NA	NA	NA	NA
NEW ORLEANS PUBLIC SERVICE	NA	NA	NA	NA	NA	NA	NA	NA
OKLAHOMA								
OKLAHOMA NATURAL GAS CO.	9,552	NA	300	NA	2,500	2,000	7,352	NA
ARKANSAS OKLAHOMA GAS CORP.	11	100	NA	NA	NA	NA	NA	NA
LONE STAR GAS CO.	250	250	35	35	535	535	(250)	(250)
KPL GAS SERVICE	100	NA	20	20	NA	265	NA	NA

APPENDIX 3 -- ADDITIONS FROM NEW CONSTRUCTION AND CONVERSIONS

DIVISION	STATE	COMPANY	ADDITIONS FROM NEW CONSTRUCTION 1986	ADDITIONS FROM NEW CONSTRUCTION 1987	TOTAL CONVERSIONS TO GAS 1986	TOTAL CONVERSIONS TO GAS 1987	LESS TOTAL LOSSES 1986	LESS TOTAL LOSSES 1987	NET ADDITIONS 1986	NET ADDITIONS 1987
		ARKANSAS LOUISIANA GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
	TEXAS									
		ENERGAS	1,913	NA	NA	NA	NA	NA	NA	NA
		ENTEX, INC.	1,500	1,200	750	1,000	110	110	2,140	2,090
		ARKANSAS LOUISIANA GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
		CITY PUBLIC SERVICE	2,492	5,684	0	0	738	1,682	1,754	4,002
		SOUTHERN UNION GAS CO.	5,515	NA	NA	NA	NA	NA	NA	NA
		LONE STAR GAS CO.	11,000	11,000	125	125	3,075	3,075	8,050	8,050
MOUNTAIN										
	ARIZONA									
		SOUTHERN UNION GAS CO.	1,803	2,200	NA	NA	NA	NA	NA	NA
		CITIZENS UTILITIES CO.	117	119	0	0	0	0	117	119
		SOUTHWEST GAS CORP.	7,281	9,500	225	325	4	2	7,502	9,823
	COLORADO									
		CITY OF COLORADO-SPRINGS	4,484	4,920	NA	NA	NA	NA	NA	NA
		K N ENERGY, INC.	NA	NA	NA	NA	NA	NA	NA	NA
		PUBLIC SERVICE OF COLORADO	22,375	16,598	NA	NA	NA	NA	NA	NA
	IDAHO									
		WASHINGTON WATER POWER	225	NA	382	NA	NA	NA	NA	NA
		INTERMOUNTAIN GAS CO.	1,206	1,250	765	760	471	NA	1,500	NA
	MONTANA									
		GREAT FALLS GAS CO.	42	30	80	40	0	0	122	70
		MONTANA POWER COMPANY	726	800	535	500	NA	NA	NA	NA
		MONTANA-DAKOTA UTILITIES CO.	311	200	42	20	75	75	278	145
	NEW MEXICO									
		GAS CO. of NEW MEXICO	10,009	6,350	NA	NA	NA	NA	NA	NA
	NEVADA									
		WESTPAC UTILITLIES	3,231	3,200	210	840	200	150	3,241	3,890
		SOUTHWEST GAS CORP.	6,228	5,161	464	1,620	15	10	6,677	6,771
	UTAH									
		MOUNTAIN FUEL SUPPLY CO.	10,238	10,593	0	11,402	0	0	10,238	21,995
	WYOMING									
		NORTHERN GAS DIVISION	NA	NA	NA	NA	974	500	NA	NA
		WYOMING GAS CO.	NA	NA	NA	NA	NA	NA	NA	NA
		MOUNTAIN FUEL SUPPLY CO.	269	225	0	0	0	0	269	225
		MONTANA-DAKOTA UTILITIES CO.	2	10	8	5	20	20	(10)	(5)
		K N ENERGY, INC.	NA	NA	NA	NA	NA	NA	NA	NA
PACIFIC										
	CALIFORNIA									
		CITY OF LONG BEACH	700	700	NA	NA	NA	NA	NA	NA
		SAN DIEGO GAS & ELECTRIC	20,300	19,000	0	0	0	0	20,300	19,000
		SOUTHWEST GAS CORP.	4,206	5,800	312	640	3	4	4,515	6,436
		PACIFIC GAS AND ELECTRIC	70,000	70,000	NA	NA	20,000	20,000	NA	NA
		SOUTHERN CALIFORNIA GAS CO.	85,882	128,725	NA	NA	4,000	4,200	NA	NA
	OREGON									
		NORTHWEST NATURAL GAS CO.	4,500	4,500	1,863	1,863	1,500	1,500	4,863	4,863
	WASHINGTON									
		CASCADE NATURAL GAS CORP.	NA	NA	NA	NA	836	NA	NA	NA
		NORTHWEST NATURAL GAS CO.	150	150	33	33	30	30	153	153
		WASHINGTON NATURAL GAS CO.	6,620	10,000	5,226	5,565	825	870	11,021	14,695
		WASHINGTON WATER POWER	691	NA	635	NA	NA	NA	NA	NA